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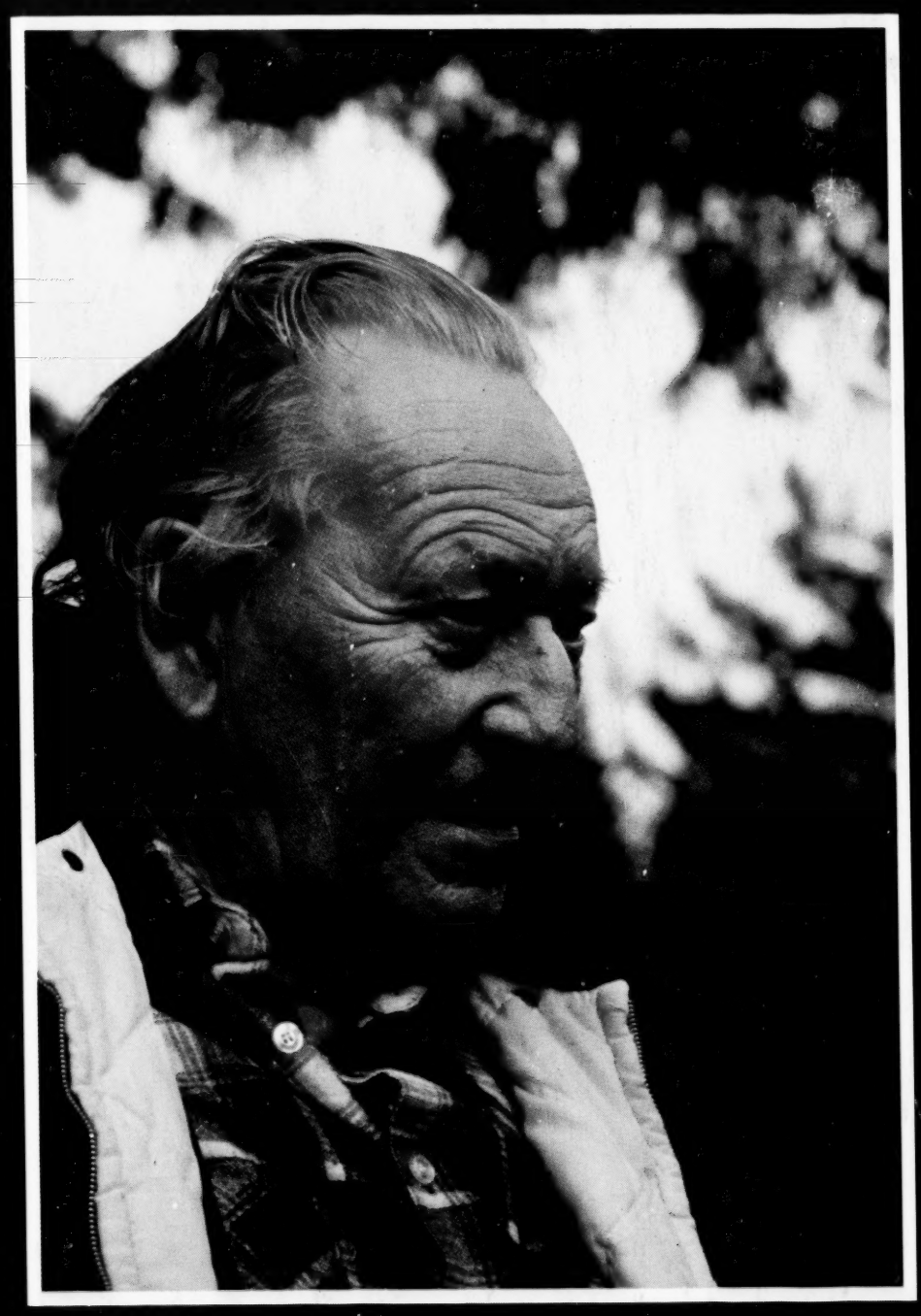
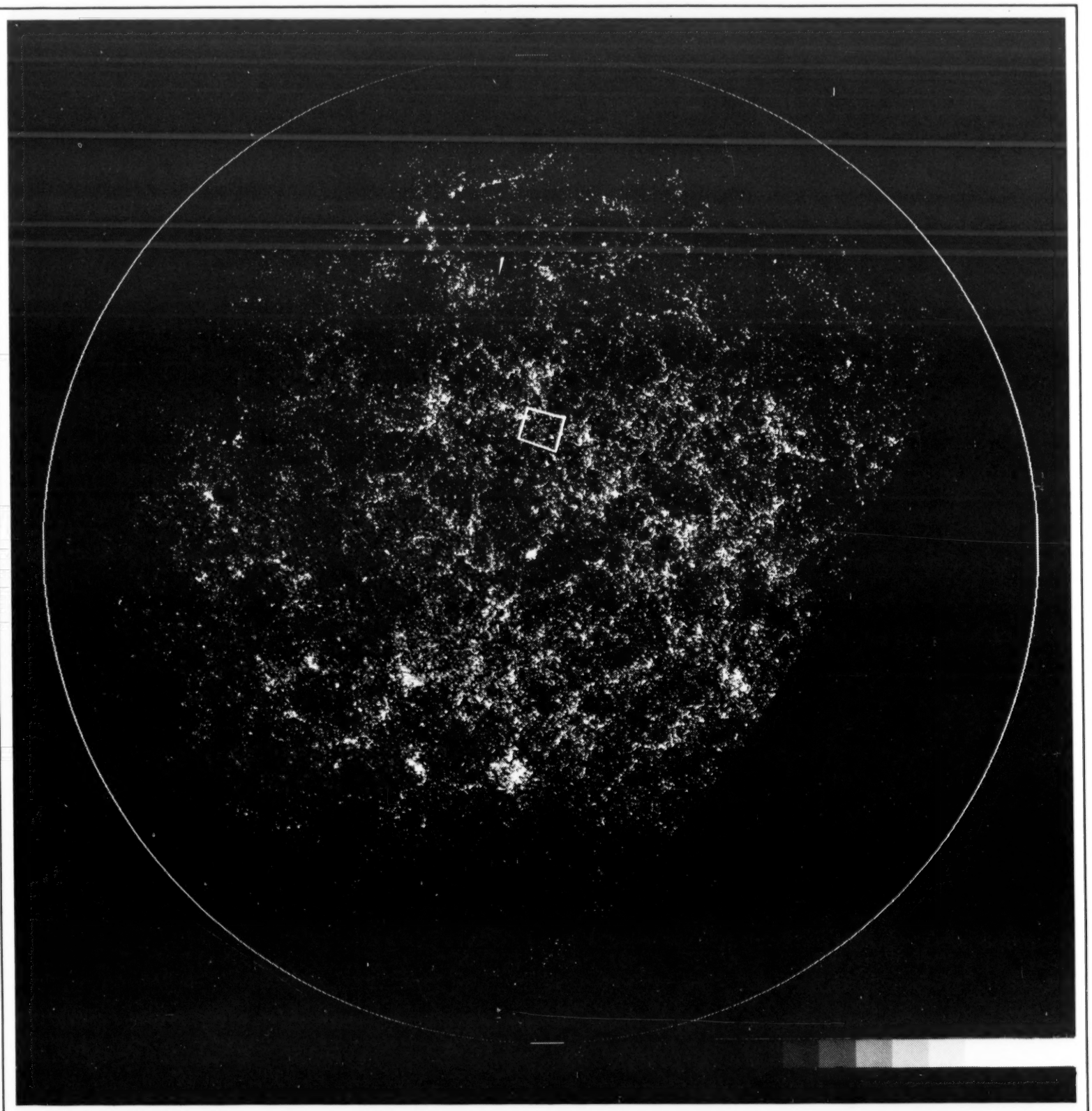


Gregory Bateson

The Pattern Which Connects

p.4

No. 18 Summer 1978 *Subscription price: $12 a year* $ 3.50



1,000,000 GALAXIES

Computer Photo-Map of the Galaxies Brighter than 19th Magnitude Visible from Earth's Northern Hemisphere

This map shows how the galaxies are distributed in our part of the universe—the local one-billion-light-year neighborhood.*

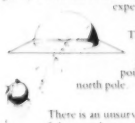
They are the one million brightest galaxies** visible by telescope from Earth's northern hemisphere and the northern hemisphere of our own Milky Way galaxy. Only galaxies are indicated here. Among the nearest is NGC 2403—6,000,000 light years away. The farthest are in the Serpens Virgo cloud (made up of ten galaxy clusters)—1,000,000,000 light years away.

Local debris such as Sun, Moon, planets, asteroids, and the 100,000,000,000 other stars of our galaxy are left out of the map.

*A light year equals 5,878,000,000,000 miles.

**The faintest galaxies on the map—19th magnitude—are 160,000 times dimmer than can be seen with the naked eye.

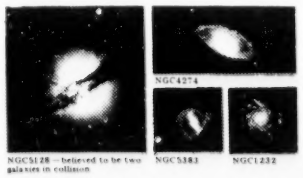
The circle of the map shows a different perspective from what we are used to. It is the northern hemisphere *of our galaxy*. The rim of the circle is looking along the thick of our galaxy—not many other galaxies are visible through our dust. The center of the circle is looking straight up from the plane of our galaxy—with the clearer view of other galaxies you would expect.



The plane of the Earth's rotation is at a 60° angle to the plane of the galaxy, so the Earth's north pole points 60° away from the galactic north pole.

There is an unsurveyed crescent on the lower right of the map because the Earth's horizon limited the view from Lick Observatory, California (38° North latitude), where the survey was made. Study from an observatory closer to the Earth's equator could fill the gap—presumably the results would look like the rest of the map.

Galaxies vary considerably in size and structure. The diagrams above show an edge-on view of a spiral galaxy like our own. Here are photographs of other typical galaxies.



NGC5128—believed to be two galaxies in collision

NGC4274

NGC5383

NGC1232

The Lick Observatory-based survey was made by Donald Shane and Carl Wirtanen using a microscope on 1,300 sky photographs, each one 17 inches square. It took them twelve years to complete the survey.

This map made from their data is divided into a million squares, each one representing a patch of sky 1/6° × 1/6°. (Horizon over to horizon is 180°.) The grey tone in each square represents the number of galaxies counted in that patch—black for none, dark gray for one, etc., up to white for 10 or more galaxies.

Only when this picture had been made could Shane and Wirtanen stand back and fully appreciate what they had been mapping. The complicated pattern of light and dark areas shows clearly that the galaxies are not smoothly distributed through space—they appear in tight clusters, in curious filaments, and broad clouds across they sky. This is the large-scale texture of the universe.

As galaxies tend to form clusters, the clusters tend to form super clusters, and so on up to an apparent limit of super-super cluster size at about 60,000,000 light years. (We don't know why that is the limit.) The best place to look for a galaxy, Shane and Wirtanen found, is right next to another galaxy.

The galaxy cluster above (in the constellation Serpens) is so tight that material appears to flow between the galaxies.

This map is more comprehensive than anything tried before but it's still crude and local compared to what's possible. Take the 6° × 6° square indicated on the big map—it shows 1800 galaxies here. When Konrad Rudnicki and colleagues at the Jagellonian University in Poland took a deeper survey of that area—counting galaxies four times dimmer and more distant than here—they found 10,000 galaxies. If they did that for the entire area shown on our map, you might see 6,000,000 galaxies represented.

In that same 6° × 6° area the most powerful telescopes on Earth *could* locate 1,000,000 galaxies. The total number of galaxies visible from Earth in both galactic hemispheres may be over 1,100,000,000.

Telescopes in space will show us a great deal more than that. ■

—*P. James E. Peebles and Stewart Brand*

The map was made by Bernie Sieberg, Mike Seldner and Ray Sonora, who were graduate students at Princeton University. They use a film scanner normally used in the graphic arts industry for making color separation negatives and modified by Paul Zucchino and John Lowrance as part of preliminary technical development for the Space Telescope.

The diagrams are by Tom Parker, Alpine, New York.

For further reading see "The Clustering of Galaxies," by J. E. Groth, P. J. E. Peebles, M. Seldner and R. M. Sonora, *Scientific American*, Nov. 1977, p. 76; "A New Reduction of the Lick Catalog of Galaxies," by M. Seldner, B. Siebers, E. J. Groth and P. J. E. Peebles, *The Astronomical Journal*, Vol. 82, page 249, 1977; and "Two- and Three-Point Correlation Functions for the High Resolution Shane-Wirtanen Catalog of Galaxies," by E. J. Groth and P. J. E. Peebles, *The Astrophysical Journal*, Vol. 217, page 385, 1977.

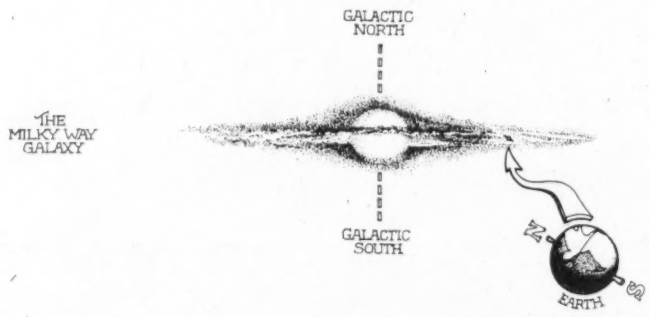
©1978 by The CoEvolution Quarterly, Box 428, Sausalito, California 94965 Price $4

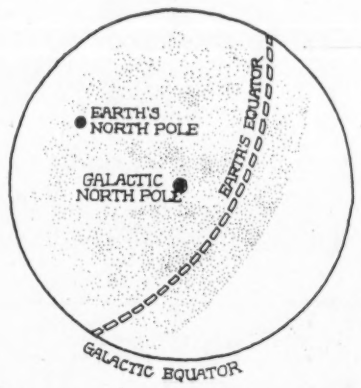
The "1,000,000 Galaxies" poster, 36"x48", is available for $4 postpaid (mailed in a tube) from The CoEvolution Quarterly, Box 428, Sausalito, CA 94965.
There's an order form and postage-free envelope on p. 145.

"This is the Large-scale Texture of the Universe"

This map shows how the galaxies are distributed in our part of the universe – the local one-billion-light-year neighborhood.*

They are the one million brightest galaxies** visible by telescope from Earth's northern hemisphere and the northern hemisphere of our own Milky Way galaxy. Only galaxies are indicated here. Local debris such as Sun, Moon, planets, asteroids, and the 100,000,000,000 other stars of our galaxy are left out of the map.





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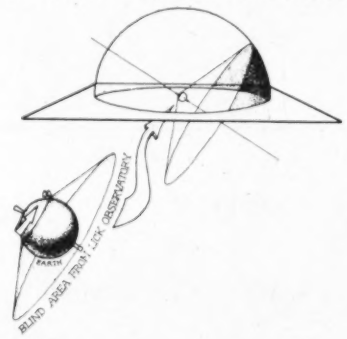

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Cover

The photograph of Gregory Bateson was taken a month after surgery which revealed inoperable lung cancer. The operation and its dire prognosis was three months ago now, and Gregory is looking fitter than he has in years, due in part perhaps to staying at Esalen Institute in Big Sur. He finished his book, **Mind and Nature: A Necessary Unity**, *right on schedule and sent it off to Dutton for publication this fall.*

The desert photograph on the back cover is by Los Angeles artist Jayme Odgers, 38. His gallery is NUAGES, Environment for Contemporary Art, 2080 Century Park East, Los Angeles, CA 90067. The gallery sells a poster of this photograph for $6 postpaid ($15 if you want a signed one).

—SB (Stewart Brand)

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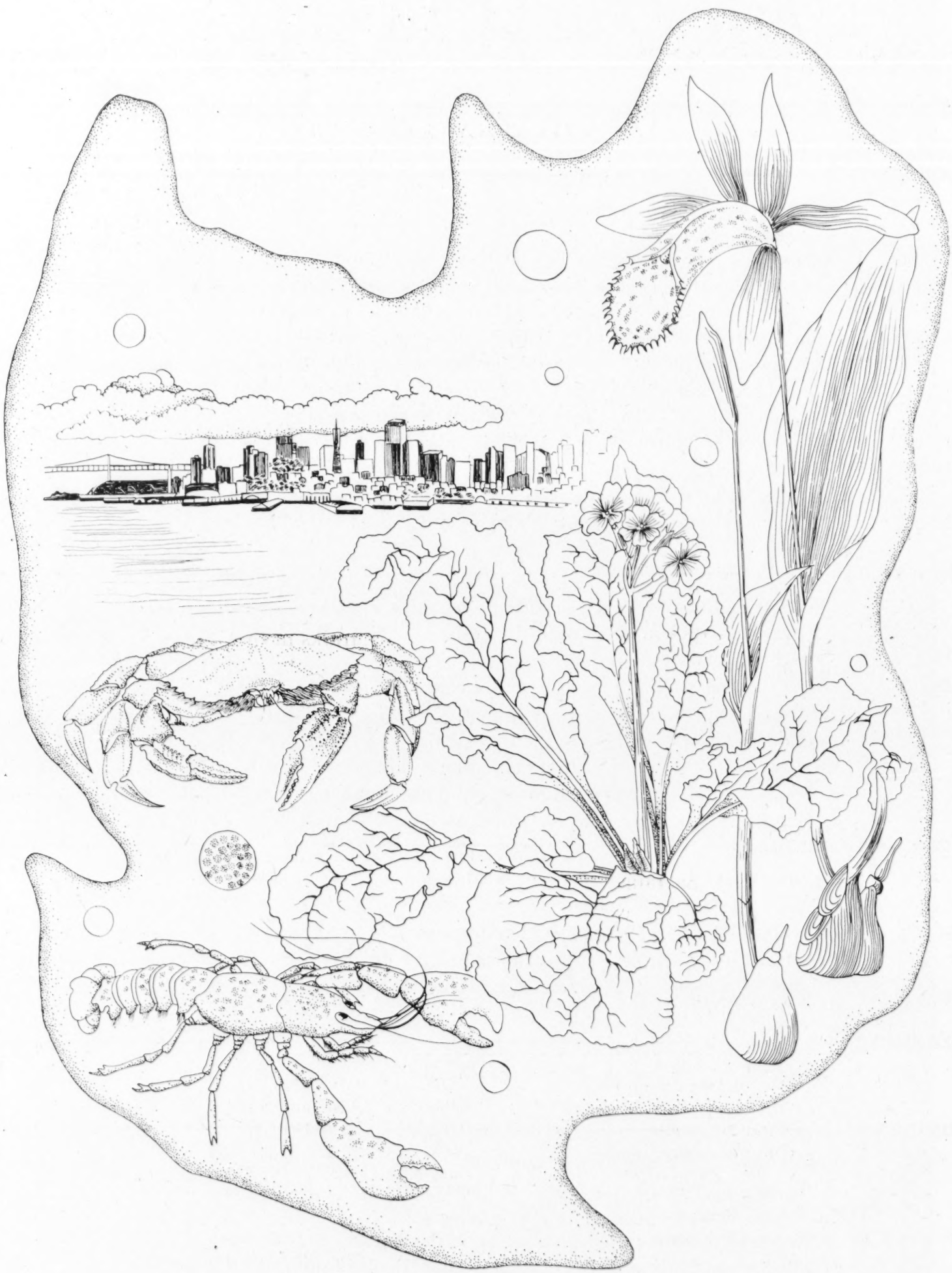


What pattern connects the crab to the lobster and the orchid to the primrose and all the four of them to me? And me to you? And all the six of us to the amoeba in one direction and to the back-ward schizophrenic in another?

The Pattern Which Connects

by Gregory Bateson

Illustrations by Joan E. Thomson

Plotinus the Platonist proves by means of the blossoms and leaves that from the Supreme God, whose beauty is invisible and ineffable, Providence reaches down to the things of Earth here below. He points out that these frail and mortal objects could not be endowed with a beauty so immaculate and so exquisitely wrought, did they not issue from the Divinity which endlessly pervades with its invisible and unchanging beauty all things.

–St. Augustine, **The City of God**

IN THE FIFTIES, I had two teaching tasks. I was teaching psychiatric residents in Palo Alto Veterans Administration mental hospital and young beatniks in the California School of Fine Arts in San Francisco.

I want to tell you how those two courses commenced – how I approached those two contrasting audiences. If you put these two first lectures side by side, you will see what I am trying to say.

To the psychiatrists I presented a challenge in the shape of a small exam paper, telling them that by the end of the course they should understand the questions in it. Question one asked for brief definitions of a) "Sacrament;" and b) "Entropy."

The young psychiatrists in the fifties were in general unable to answer *either* question. Today a few more could begin to talk about entropy.

And I suppose there are still some Christians who could say what a sacrament is . . . ?

One of the reasons I keep paying attention to the thought and activity of Gregory Bateson is that his ideas keep newly refolding on themselves with the complex sweetness of mental baklava, and in the process revealing new turns of application. The man himself doesn't hold still either. He will start to answer a familiar question with a familiar anecdote, and then familiarity will vanish down a wholly new mountain path as a different connection is drawn to a different memorized bit of Blakean doggerel and the moral of the story looks like the reverse of last time. He's not being cute. Our local Buddhist abbot, Richard Baker-Roshi, has been mildly exhorting the students lately to become dangerous characters – you can't know what they might do next. That's Gregory.

This article is most of the introduction to Bateson's new book – **Mind and Nature: A Necessary Unity,** *due Fall, 1978, from Dutton, New York City. It is derived from a talk he gave for the Lindisfarne Association, October 17, 1977, at the Cathedral of St. John the Divine in Manhattan.* *For a tape of the original talk, see p. 19.*

A good many people I know consider Bateson maddeningly obscure. Some of those later found him maddeningly clear and they started paying attention. I don't know anyone who stopped paying attention once they started. That's rare in this time of intellectual/spiritual impulse-shopping.

–SB

I was offering my class the core notions of twenty-five hundred years of thought about religion and of thought about science. I felt that if they were going to be doctors (medical doctors) of the human soul they should at least have a foot on each side of the ancient arguments. They should be familiar with the central ideas of both religion and science.

For the art students I was more direct. It was a small group of about ten to fifteen students, and I knew that I would be walking into an atmosphere of skepticism bordering on hostility. It was fairly clear when I entered that I was expected to be an incarnation of the devil, who would argue for the common sense of atomic warfare and pesticides. In those days (and even today?) science was supposed to be "value-free" and not guided by "emotions."

I was prepared for that. I had two paper bags, and the first of these I opened and produced a freshly-cooked *crab*, which I placed on the table. I then challenged the class somewhat as follows: "I want you to produce arguments which will convince me that this object is the remains of a living thing. You may imagine, if you will, that you are Martians and that on Mars you are familiar with living things, being indeed yourselves alive. But of course you have never seen crabs or lobsters. A number of objects like this, many of them fragmentary, have arrived, perhaps by meteor. You are to inspect them and arrive at the conclusion that they are the remains of living things. How would you arrive at that conclusion?"

Of course, the question set for the psychiatrists was the *same question* as that which I set for the artists: Is there a biological species of entropy?

Both questions concerned the underlying notion of a dividing line between the world of the living (where *distinctions* are drawn and difference can be a cause), and the non-living world of billiard balls and galaxies (where forces and impacts are the "causes" of events).

These are the two worlds which Jung[1] (following the Gnostics) calls *Creatura* (the living) and *Pleroma* (the non-living).

I was asking: What is the difference between the physical world of Pleroma, where forces and impacts provide sufficient basis of explanation; and the Creatura, where nothing can be understood until *differences* and *distinctions* are invoked?

In my life, I have put the descriptions of sticks and stones and billiard balls and galaxies in one box, the "Pleroma," and have left them alone. In the other box, I put living things, crabs, people, problems of beauty, and problems of difference. The contents of this second box are the subject of this book.

I was griping recently about the shortcomings of occidental education. It was in a letter to my fellow Regents of the University of California, and the following phrase crept into my letter:

"Break the pattern which connects the items of learning and you necessarily destroy all quality."

"The pattern which connects." Why do schools teach almost nothing of the pattern which connects? Is it that teachers know that they carry the kiss of death which will turn to tastelessness whatever they touch and therefore they are wisely unwilling to touch or teach anything of real-life importance? Or is it that they carry the kiss of death *because* they dare not teach anything of real-life importance? What's wrong with them?

---

1. C.G. Jung, *Septem Sermones ad Mortuos* (London: Stuart & Watkins, 1967).

Brand

Mary Catherine Bateson (Cathy – Gregory's daughter by Margaret Mead) came to California from the management school she heads in Iran to help her father with the endless details of final editing on **Mind and Nature**. *Gregory had a quite serious operation for lung cancer this March – from which working on this book seems to be part of the recovery.*

Be that as it may, let me ask about connecting patterns. What pattern connects the crab to the lobster and the orchid to the primrose and all the four of them to me? And me to you? And all the six of us to the amoeba in one direction and to the back-ward schizophrenic in another?

So I am faced with trying to tell you why I have been a biologist all my life, what it is that I have been trying to study; what thoughts can I share regarding the total biological world in which we live and have our being? How is it put together?

What now must be said is difficult; appears to be quite EMPTY; and is of very great and deep importance to you and to me; and, at this historic juncture, I believe it to be important to the whole survival of the biosphere, which you know is threatened.

What is the pattern which connects all the living creatures?

Let me go back to my crab and my class of beatniks. I was very lucky to be teaching people who were not scientists and the bias of whose minds was even anti-scientific. All-untrained as they were, their bias was aesthetic. I would define that word, for the moment, by saying that they were *not* like Peter Bly, the character of whom Wordsworth sang

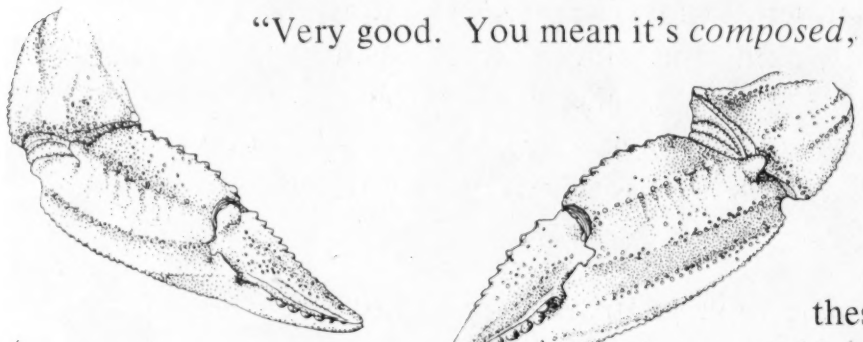
> *A primrose by the river's brim*
> *A yellow primrose was to him;*
> *And it was nothing more.*

Rather they would meet the primrose with *recognition* and *empathy*. So by "aesthetic" I mean responsive to *the pattern which connects.* So you see, I was lucky. Perhaps by coinci-

dence, I faced them with what was (though I knew it not) an aesthetic question: *How are you related to this creature? What pattern connects you to it?*

By putting them on an imaginary planet, "Mars," I stripped them of all thought of lobsters, amoebae, cabbages, etc.; and forced the diagnosis of "life" back into identification with living self: "*You* carry the bench marks, the criteria, with which you could look at the crab to find that it, too, carries the same marks." My question was much more sophisticated than I then knew.

So they looked at the crab. And first of all they came up with the observation that it is *symmetrical* – the right side resembles the left.



"Very good. You mean it's *composed*, like a painting . . .?" (No response.)

Then they observed that one claw was bigger than the other. So. It was *not* symmetrical.

I suggested that if a number of these objects had come "by meteor" they would find that in (almost) all specimens it was the same side (R. or L.) which carried the bigger claw. (No response. "What's Bateson getting at?")

Going back to symmetry, somebody said that *"Yes, one claw is bigger than the other, but both claws are made of the same parts."*

Ah! Look what a beautiful and noble statement that is. How the speaker politely flung into the trash can the idea that *size* could be of primary or profound importance and went after the *"pattern which connects."* He discarded an asymmetry in *size* in favor of a deeper symmetry in formal relations.

Yes, indeed, the two claws are characterized (ugly word) by embodying *similar relations between parts.*

Never quantities: always shapes, forms, and relations.

This indeed was something which characterized the crab as a member of Creatura, a living thing.

Later it appeared that not only are the two claws built on the same "ground plan," i.e., upon corresponding sets of relations between corresponding parts, but that these relations between corresponding parts even extend down the series of the walking legs. We could recognize in every leg the pieces which corresponded to the pieces in the claw.

And in your own body, of course, the same sort of thing is true. In the upper arm, humerus corresponds to femur in the thigh; radius-ulna corresponds to tibia-fibia; the carpals in the wrist correspond to tarsals in the foot; and fingers correspond to toes.

So. The crab is repetitive and rhythmical? Repetitive with modulation? Like Music? Indeed, the direction from head towards tail corresponds to a sequence in time. In embryology, the head is older than the tail.

Professional biologists talk about phylogenetic *homology* for the *class* of facts of which one example is the formal resemblance between my limb bones and those of a horse. Another example is the formal resemblance between the appendages of a crab and those of a lobster.

That's one class of facts. Another (somehow related?) class of facts is what they call serial homology. Here one example is the rhythmic repetition with change from appendage to appendage down the length of the beast (crab or man); and another (not quite comparable because of a difference in relation to time) would be the bilateral symmetry of the man or crab. (It is, I think, not true that "right" is older or younger than "left.")

Let me start again: The parts of a crab are connected by patterns – various patterns of bilateral symmetry, of serial homology, and so on. Let us call these patterns *within* the individual growing crab *first-order* connections. But now we look at crab and lobster and we find again connection by pattern – call it *second-order* connection, or phylogenetic homology.

Now we look at man or horse and find that here again we can see symmetries and serial homologies. Looking at the two together, we find the same cross-species sharing of pattern with a difference – phylogenetic homology. And, of course, the same discarding of magnitudes in favor of shapes, patterns, and relations. In other words, as this distribution of formal resemblances is spelled out, it turns out that gross anatomy exhibits three levels or logical types of descriptive propositions:

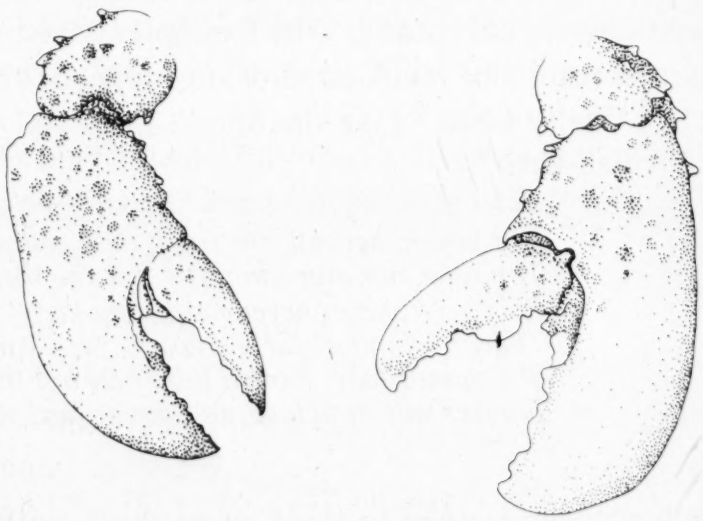
First, the parts of any member of Creatura are to be compared with other parts of the same individual to give first-order connections.

Second, crabs are to be compared with lobsters or men with horses to find similar relations between parts, i.e., second-order connections.

Third, the *comparison* between crabs and lobsters is to be compared with the comparison between man and horse, to provide third-order connections.

We have constructed a ladder of how to think about . . . about what? Oh yes, the pattern which connects.

My central thesis can now be approached in words: The *pattern which connects* is a meta-pattern. It is a pattern of patterns. It is that meta-pattern which defines the vast generalization that indeed *it is patterns which connect.*



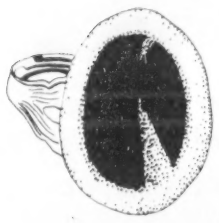
I warned some pages back that we would encounter emptiness, and indeed it is so. "Mind" is empty; it is no-thing. It exists only in its ideas, and these again are no-things. Only the ideas are immanent, embodied in their examples. And the examples are again no-things, because the claw, *as an example*, is not the *Ding an sich*. It is precisely *not* the *"thing in itself."* It is what mind makes of it – namely, an *example* of something or other.

Let me go back to the classroom of young artists.

You will recall that I had *two* paper bags. In one of them was the crab. In the other I had a beautiful large conch shell. By what token could they know that the spiral shell had been part of a living thing?

When she was about seven, somebody gave my daughter Cathy a "cat's eye" mounted as a ring. She was wearing it and I asked her what it was. She said it was a cat's eye. I said,

"But what *is* it?" "Well, I know it's not the eye of a cat. I guess it's some sort of stone." I said, "Take it off and look at the back of it." She did that and exclaimed, "Oh, it's got a spiral on it! It must have belonged to something alive."



Actually, these greenish disks are the opercula (lids) of a species of tropical marine snail. Soldiers brought lots of them back from the Pacific at the end of World War II.

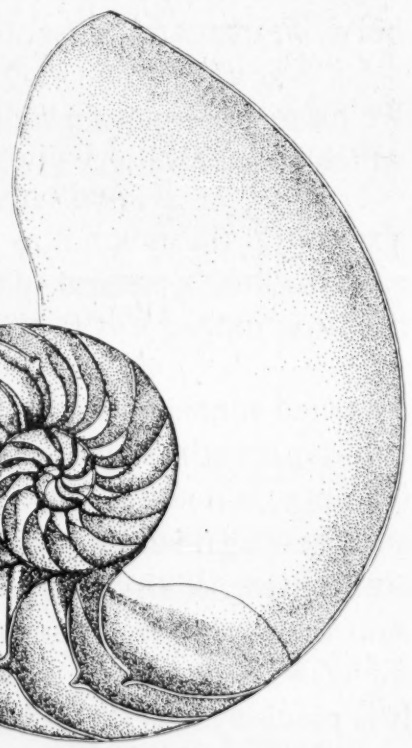
Cathy was right in her major premise that all spirals in this world, except whirlpools, galaxies, and spiral winds are, indeed, made by living things. There is a big literature on this subject, which some readers may be interested in looking up (the key words are"Fibonacci series" and "Golden Section.")

What comes out of all this is that a spiral is a figure which *retains its shape – i.e., its proportions – as it grows* in one dimension by addition at the open end. Really, you see, there are no truly static spirals.

But the class had difficulty. They looked for all the beautiful formal characteristics which they had joyfully found in the crab. They had gotten the idea that formal symmetry, repetition of parts, modulated repetition, and so on, were what teacher wanted. But the spiral was *not* bilaterally symmetrical, was not segmented.

They had to discover a) that all symmetry and segmentation was somehow a result, a payoff, from the fact of *growth*; and b) that growth makes its formal demands; and c) that one of these is satisfied (in a mathematical, an ideal sense) by spiral form.

So the conch shell carries the snail's *prochronism* – its record of how, *in its own past*, it successively solved a formal problem in pattern formation. It, too, proclaims affiliation under that pattern of patterns which connect.



So far, all the examples that I have offered you – the patterns which have membership in that pattern which connects – the anatomy of crab and lobster, the conch, and man and horse – all have be been superficially static. The examples have been the frozen shapes, results of regularized change indeed, but themselves finally fixed. Like the figures in Keats' "Ode on a Grecian Urn:"

> *Fair youth, beneath the trees, thou can'st not leave*
> *Thy song, nor ever can those trees be bare;*
> *Bold lover, never never canst thou kiss,*
> *Though winning near the goal – yet do not grieve;*
> *She cannot fade, though thou hast not thy bliss,*
> *Forever wilt thou love, and she be fair!*

We have been trained to think of patterns, with the exception of music, as fixed affairs. It's easier and lazier that way, but, of course, all nonsense. The truth is that the right way to begin to think about the pattern which connects is to think of it as *primarily* (whatever that means) a dance of interacting parts, and only secondarily pegged down by various sorts of physical limits and by the limits which organisms impose.

There is a story which I have used before and shall use again: It is the story of a man who wanted to know about MIND, not in nature but in his private large computer. He asked it

(no doubt in his best Fortran), "Do you compute that you will ever think like a human being?" The machine then set to work to analyze its own computational habits. Finally the machine printed its answer on a piece of paper, as they do. The man ran to get the answer and found, neatly typed, the words:

THAT REMINDS ME OF A STORY

A story is a little knot or complex of that species of connectedness which we call relevance. In the sixties the students were fighting for "relevance," and I would assume that any A is relevant to any B if both A and B are parts or components of the same "story."

Again we face connectedness at more than one level:

First, connection between A and B by virtue of their being components in the same "story."

And then, connectedness between people in that all think in terms of stories. (For surely the computer was right – that this is how people think.)

Now I want to show that, whatever the word "story" means in the story which I told you, the fact of thinking in terms of stories does not isolate human beings as something separate from the starfish and the sea anemones, the coconut palms and the primroses. Rather, if the world be connected, if I am at all fundamentally right in what I am saying, *thinking in terms of stories* must be shared by all mind or minds, whether ours or those of redwood forests and sea anemones.

Context and relevance must be characteristic not only of all "behavior" (those stories which are projected out into "action"), but also of all those internal stories, the sequences of the building up of the sea anemone. Its embryology must be somehow made of the stuff of stories; and behind that again the evolutionary process through millions of generations whereby the sea anemone, like you and like me, came to be – that process, too, must be of the stuff of stories.

Prospero says, "We are such stuff as dreams are made on," and surely he is nearly right. But I sometimes think that dreams are only fragments of that stuff. It is as if the stuff of which we are made were totally transparent and therefore imperceptible and as if the only appearances of which we can be aware are cracks and planes of fracture in that transparent matrix. Dreams and percepts and stories are perhaps cracks and irregularities in the uniform and timeless matrix. Was this what Plotinus meant by an "invisible and unchanging beauty which pervades all things"?

What is a "story," that it may connect the As and Bs, its parts? And is it true that the general fact that parts are connected in this way is at the very root of what it is to be alive? I offer you the notion of *context*, i.e., *pattern through time*.

What happens when, for example, a patient goes to a Freudian psychoanalyst? He walks into and creates something which I will call a "context" which is at least symbolically (as a piece of the world of ideas) limited and isolated by closing the door – the geography of the room and the door is used as a representation of some strange, non-geographic message.

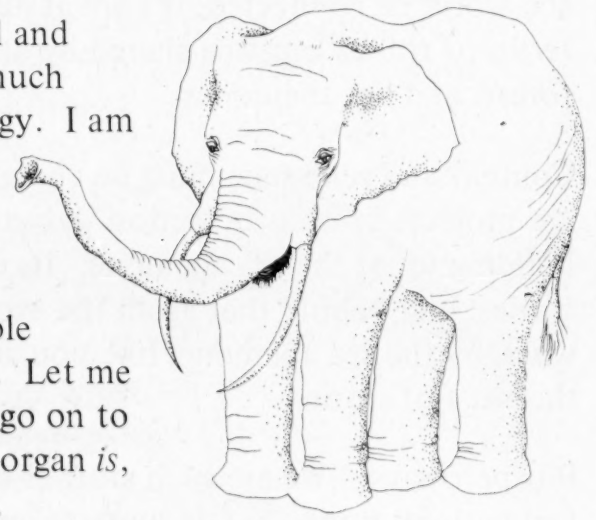
But he comes with stories. Not just a supply of stories which he can deliver to the analyst, but with stories built into his very being. The patterns and sequences of childhood experience are built into the man. His father did so and so; his aunt did such and such; and what they

did was outside his skin but, whatever it was that he learned, his learning happened within his experiential sequence of what those important others – his aunt, his father – did.

Now he comes to the analyst, this newly important other, who must be viewed as a father (or perhaps an anti-father) because nothing has meaning except it be contextualized. This viewing is called the "transference" and is a general phenomenon in human relations. It is a universal chracteristic of all interaction between persons, because, after all, the shape of what happened between you and me yesterday carries over to shape how we respond to each other today. And that shaping is, in principle, a *transference* from past learning.

I offer you this phenomenon of transference to exemplify the truth of the computer's perception that we think in stories. The analyst must be stretched or shrunk onto the Procrustean bed of the patient's childhood stories. But also, by reference to psychoanalysis, I have narrowed the idea of "story." I have suggested that it has something to do with *context*, a crucial concept, partly undefined but to be examined later.

And "context" is linked to another undefined notion called "meaning." Without context, our words, our actions, have no meaning at all. This is true not only of human communication in words, but also of all communication whatsoever, true of all mental process, all mind. That which tells the sea anemone how to grow and the amoeba what he should do next.



I am drawing an analogy between context in the superficial and partly conscious business of personal relations and in the much deeper, more archaic processes of embryology and homology. I am asserting that, whatever the word "context" means, it is an appropriate word – the necessary word – in the description of all of these distantly contrasting processes.

Let us look at homology backwards. Conventionally, people prove that evolution occurred by citing cases of homology. Let me do the reverse: let me assume that evolution occurred and go on to ask about the nature of homology. Let us ask what some organ *is*, according to the light shed upon it by evolutionary theory.

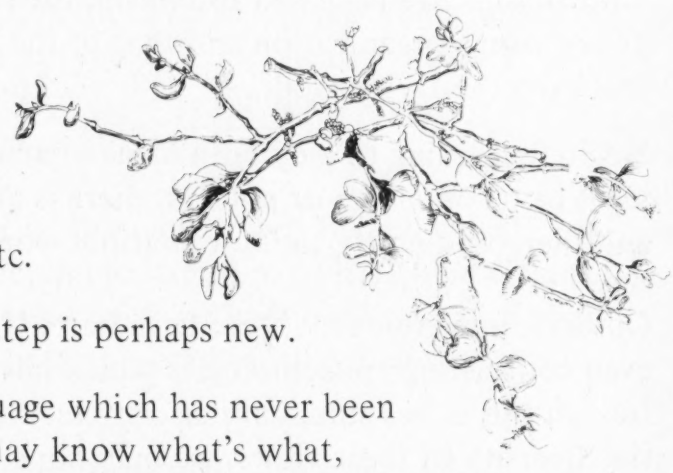
What is an elephant's trunk? What is it phylogenetically? What did genetics tell it to be?

As you all know, the answer is that the elephant's trunk is his "nose." (Even Kipling knew!) And I put the word "nose" in quotes because the trunk is being defined by an internal process of communication in growth. The trunk is a "nose" by a process of communication: the *context* of the trunk identifies it as a nose. That which stands between two eyes and north of a mouth is a nose. And that's that. It's the *context* that fixes the meaning. And it must surely be the receiving context that provides meaning for the genetic instructions.

There are people who would prefer to define noses by their "function" – that of smelling. But if you spell out those definitions, you arrive at the same place using a temporal context instead of a spatial context. You attach meaning to the organ by seeing it as playing a given part in sequences of interaction between creature and environment. I call that a temporal context. There is a sort of orthogonal relation between spatial and temporal classification of contexts. But in embryology the first definition must always be in terms of formal relations. The foetal trunk cannot, in general, smell anything.

Let me illustrate this species of connection – this connecting pattern – a little further, by citing a discovery of Goethe's (Faust's Goethe). He was a considerable botanist, who had

great ability in the recognizing of the non-trivial, i.e., in recognizing the patterns which connect. He it was who straightened out the vocabulary of the gross comparative anatomy of flowering plants. He discovered that a "leaf" is not satisfactorily defined as "a flat green thing," or a stem as "a cylindrical thing." The way to go about the definition – and undoubtedly somewhere deep in the growth processes of the plant this is how the matter is handled – is to note that buds – i.e., baby stems – form in the angles of leaves. From that, the botanist constructs the definitions on the basis of the relations between stem, leaf, bud, angle, etc.



"A stem is that which bears leaves."

"A leaf is that which has a bud in its angle."

"A stem is what was once a bud in that position," etc.

All that is – or should be – familiar. But the next step is perhaps new.

There is a parallel confusion in the teaching of language which has never been straightened out. Professional linguists nowadays may know what's what, but children in school are still taught nonsense. They are told that a "noun" is the "name of a person, place, or thing"; and that a "verb" is "an action word," and so on. That is, they are taught at a tender age that the way to define something is by what it supposedly *is* in itself – not by its relations to other things.

Most of us can remember being told that a noun is "the name of a person, place, or thing." And can remember the utter boredom of "parsing" sentences.

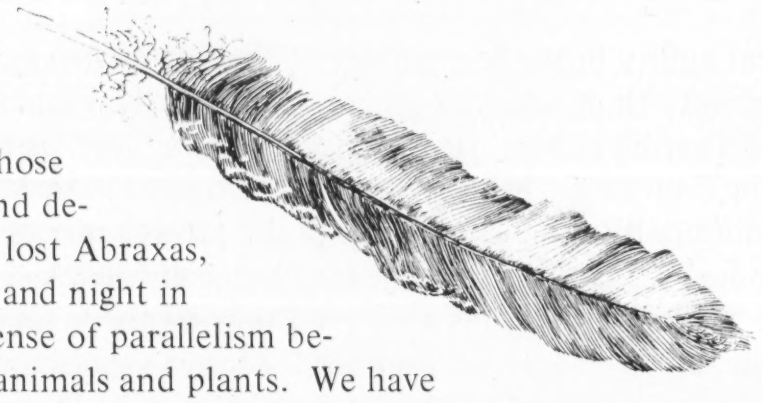
Today all that should be changed. Children could be told that a noun is a word having a certain relationship to a predicate. A verb has a certain relation to a noun, its subject. And so on. Relationship could now be used as basis for definition, and any child could then see that there is something wrong with the sentence " 'Go' is a verb."

I remember the boredom of analyzing sentences and the boredom later, at Cambridge, of learning comparative anatomy. Both subjects, as taught, were torturously unreal.

We *could* have been told something about the pattern which connects: that all communication necessitates *context*, and that without context there is no meaning. The teacher could have argued that growth and differentiation must be controlled by communication. The shapes of animals and plants are transforms of messages. And language is itself a form of communication. The structure of the input must somehow be reflected as structure in the output. Anatomy *must* contain an analogue of grammar because all anatomy is a transform of message material, which must be contextually shaped. And finally, *contextual shaping* is only another word for *grammar*.

And so we come back to the patterns of connection and the more abstract, more general (and most empty) proposition that indeed there is a pattern of patterns of connection.

This book is built on the opinion that we are parts of a living world. I have placed as epigraph at the head of this introduction a passage from St. Augustine in which the saint's epistemology is clearly stated. Today such a statement evokes nostalgia. Most of us have lost that sense of unity of biosphere and humanity which would bind and reassure us all with an affirmation of beauty. Most of us do not today believe that, whatever the ups and downs of detail within our limited experience, the larger whole is primarily beautiful. [more→]



We have lost the core of Christianity. We have lost Shiva, the dancer of Hinduism whose dance at the trivial level is both creation and destruction but in whole is beauty. We have lost Abraxas, the terrible and beautiful god of both day and night in Gnosticism. We have lost totemism, the sense of parallelism between man's organization and that of the animals and plants. We have lost even the Dying God.

We are beginning to play with ideas of ecology, and, though we immediately trivialize these ideas into commerce or politics, there is at least an impulse still in the human breast to unify and thereby sanctify the total natural world, of which we are.

Observe, however, that there have been – and still are – in the world many different and even contrasting epistemologies which have been alike in stressing an ultimate unity and, though this is less sure, have also stressed the notion that ultimate unity is *aesthetic*. From the diversity of these views, we may hope that perhaps the great authority of quantitative science may be insufficient to deny an ultimate unifying beauty.

I hold to the presupposition that our loss of the sense of aesthetic unity was, quite simply, an epistemological mistake. I believe that that mistake may be more serious than all the minor insanities that characterize those older epistemologies which agreed upon the fundamental unity.

A part of the story of our loss of the sense of unity has been elegantly told in Lovejoy's **Great Chain of Being**,[2] which traces the story from Classical Greek philosophy through to Kant and the beginnings of German idealism in the eighteenth century. This is the story of the idea that the world is/was timelessly created upon *deductive logic*. The idea is clear in the above quotation from **The City of God**. Supreme Mind, or Logos, is at the head of the deductive chain. Below that are the angels, then Man, then apes; and so on down to the plants and stones. All is in deductive order and tied into that order by a premise which prefigures our Second Law of Thermodynamics. The premise asserts that the "more perfect" can never be generated by the "less perfect."

In the history of biology, it was Lamarck[3] who inverted the Great Chain of Being. By insisting that Mind could be immanent in living creatures and could determine their transformations, he escaped from the negative directional premise that the perfect must always precede the imperfect. He then proposed a theory of "transformism" (which we would call "evolution") which started from infusoria (protozoa) and marched upward towards man.

The Lamarckian biosphere was still a *chain*. The unity of epistemology was retained in spite of a shift in emphasis from transcendent Logos to immanent Mind.

The fifty years which followed saw the exponential rise of the Industrial Revolution, the triumph of Engineering over Mind, so that the culturally appropriate epistemology for the **Origin of Species** (1859) was an attempt to exclude mind as an explanatory principle. Tilting at a windmill.

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2. Arthur O. Lovejoy, *The Great Chain of Being: A Study of the History of an Idea* (Cambridge: Harvard University Press, 1936).
3. J.B. Lamarck (1809), *Philosophie Zoologique*, translated as *Zoological Philosophy: An Exposition with regard to the Natural History of Animals* by Hugh Elliot (New York & London: Hafner Press, 1963).

Box 428, Sausalito, California 94965

There were protests much more profound than the shrieks of the Fundamentalists. Samuel Butler, Darwin's ablest critic, saw that the denial of mind as an explanatory principle was intolerable and tried to take evolutionary theory back to Lamarckism. But that would not do because of the hypothesis (shared even by Darwin) of the "inheritance of acquired characteristics." This hypothesis – that the responses of an organism to its environment could affect the genetics of the offspring – was an error.

I shall argue that this error was specifically an epistemological error in logical typing and shall offer a definition of mind very different from the notions of mind vaguely held by both Darwin and Lamarck. Notably, I shall assume that thought resembles phylogeny in being a stochastic process.

In what is offered in this book, the hierarchic structure of thought, which Russell called "logical typing" of classes, will take the place of the hierarchic structure of the Great Chain of Being; and an attempt will be made to propose a sacred unity of the biosphere which shall contain fewer epistemological errors than the versions of that sacred unity which the various religions of history have offered.

So the immediate task of this book is to build up a picture of how the world is joined together in its mental aspects. How do ideas, information, steps of logical or pragmatic consistency, and the like, fit together? How is logic – the classical procedure for making chains of ideas – related to an outside world of things and creatures, parts and wholes? Do ideas really occur in chains, or is this lineal structure imposed upon them by scholars and philosophers? How is the world of logic, which eschews "circular argument," related to a world in which circular trains of causation are the rule rather than the exception?

What has to be investigated and described is a vast network or matrix of interlocking message material and abstract tautologies, premises, and exemplifications, multiple membership under rules and regularities.

But, as of 1978, there is no conventional method of describing such a tangle, or even beginning to do it.

Fifty years ago, we would have assumed that the best procedures for such a task would have been either logical or quantitative or both. But we shall see – what every schoolboy ought to know – that logic is precisely unable to deal with recursive circuits without generating paradox, and that quantities are precisely not the stuff of complex communicating systems.

In other words, logic and quantity turn out to be inappropriate devices for describing organisms and their interactions and internal organization. The particular nature of this inappropriateness will be exhibited in due course, but, for the moment, the reader is asked to accept as true the assertion that, as of 1978, there is no conventional way of explaining or even describing the phenomena of biological organization and human interaction.

Throughout, the thesis of the book will be that it is possible and worthwhile to *think* about many problems of order and disorder in the biological universe, and that we have today a considerable supply of tools of thought which we do not use, partly because – professors and students alike – we are ignorant of many currently-available insights, and partly because we are unwilling to accept the necessities which follow from a clear view of the human dilemmas. ▪

By way of demonstrating the application of Bateson to the world of affairs, here is a purloined letter (sent to us by Brent Stuart). The hot issue in Berkeley last year was the tight relation between the University of California and the Lawrence Livermore Laboratory, which designs America's nuclear weapons. The UC Regents were being asked to sever the relation. This was Regent Bateson's response. (So far as I know, no one has acted on it.)

—SB

Nuclear addiction: Bateson to Saxon

San Francisco
July 15, 1977
3:30 a.m.

David Saxon
President
University of California

Dear Dave,

They want to put me on The Regents' Committee for "Special Research Projects" — and so again I face sleepless nights with the A-bomb ticking away under my bed.

At the dinner at Jack's, Gloria Copeland told me a little of the seriousness of your new committee which is looking into the relation between Livermore and the University, so I write through you to them.

I tried (it was at March meeting of Regents in L.A.) to say where I stand on the relation between the University and the atom projects. I want now to say all that again and to open new ground by stating that there is a whole realm of uninvestigated problems lying behind what I then said and proposing that U.C. begin as soon as may be to do the appropriate research. It will need people, money, time and will be difficult.

At the L.A. meeting I tried to say that the atomic business is an example of multi-level *"addiction."* At perhaps five interlocking hierarchic levels there is a situation of mutual dependency-distrust: international, national, industrial, military, university, familial, personal. All the way up-and-down from the personal to the international levels, nobody can take his/her hand/foot off the accelerator pedal. But they call it the "brake." Oppenheimer once told me "The world seems to be moving towards Hell at a high velocity, with positive acceleration and probably a positive rate of change of acceleration. It will perhaps only fail to reach its destination *upon that condition that we and the Russians be willing to let it."*

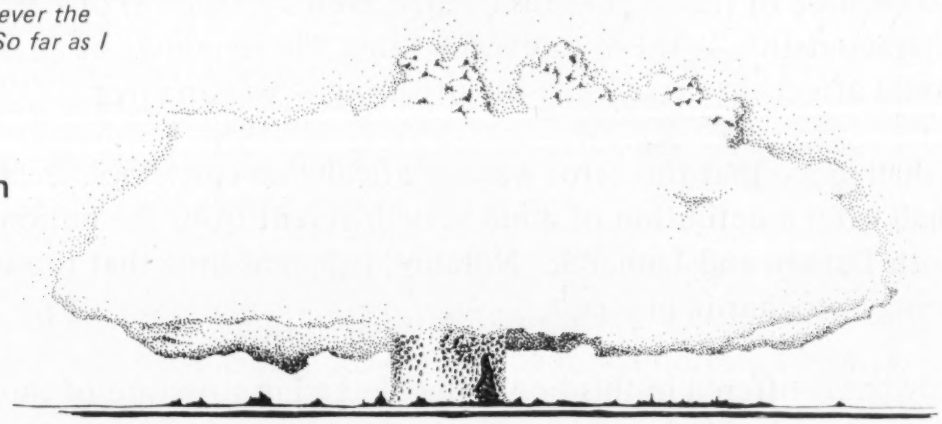
That remark of Oppenheimer's will serve to introduce the sort of study of recursive systems which I hope we might undertake. As I see it, the sequences of progressive changes in biological relations are all inter-related and form together the subject of a single uninvestigated science which has deep philosophic and ethical aspects as well as meeting urgent practical needs.

"Adaptation," "acclimation," "addiction" are three concepts which stand out from a single unmapped realm — three heads, above water, of a single underwater iceberg. And those three are the words we use of individual organisms. There are other words for analogous inter-acting phenomena when these affect nations (e.g., war, armaments race), groups of people (racism, exploitation, sexism, schismogenesis). But all the processes end up *if permitted* in the psychotic ward or the double death of Carroll's "Bread-and-butterfly."

The question (for the applied scientist) is *what controls these processes?*

And nowadays this is not entirely a matter for drawing room conversation and political debate. We begin to have some scientific expertise in the subject. There is (for example) L.F. Richardson's early work before World War II on "Generalized Foreign Politics" and "Statistics of Deadly Quarrels." Van Neumann and Morgenstern's "Theory of Games" and later work of Rapaport on "Prisoner's Dilemma," my own stuff on "Schismogenesis" or "Double bind" and alcoholism. A lot of mathematics of recursive systems from Wiener in the 1940's to Varela, Maturana, etc. in the last five years. And so on.

One thing will have to be watched — the preference, which is strong in scientists, for *not* looking at total systems. If they can, they will see their professional problems in dualist terms (organism *versus* environment, etc.) and end up with a theo-



retical basis for assigning blame. "It's the schizophrenogenic mother"; "It's the Russians"; "It's the damned hippies"; and even "It's our own fault."

If we are going to achieve any serious understanding as scientists — or any compassion as humans — we have to get above blaming even our silly selves.

Yours,

Gregory Bateson

Bateson to Ellerbroek

This, and some of the letters following, respond to Ellerbroek's cover article in the Spring '78 CQ, *"Language, Thought, and Disease." The argument was that acne, among other ailments, may result from inaccurate self-reporting, and be cured by good semantics. That goes for cancer as well, said Ellerbroek.*

—SB

U.C. Medical Center
San Francisco
March 14, 1978

Dr. W.C. Ellerbroek, M.D.
Box 367
Sunset Beach, California 90742

Dear Dr. Ellerbroek:

I write to you after just reading your memorandum in **CoEvolution Quarterly**, the Spring issue for 1978. Of course, I totally agree with what you say.

I write with sort of a double relevance and interest, in that I have spent the last ten years trying to say similar things. Under separate cover I will send you a copy of my book of essays in which, no doubt, you will find many things that you say 'yes, yes' to, just as I find many things in your article. The second immediate relevance between me and what you say in your article is that about ten days ago I was operated on and, thereby, diagnosed for an inoperable "malignancy" in the lung. We are sort of doubly relevant to each other, and I write to you from a hospital bed in the University of California hospital, San Francisco.

Let me go straight on to our small points of disagreement and see if I can do anything positive with them. I think, first of all, that Benjamin Whorf did not state his case correctly and that one of the reasons why he is now being repudiated by the linguists is that they have been able to take advantage of his mis-statement to create a myth about what he was saying, which is, in fact, an untrue myth at which they can then laugh. It all turns on the semantics of the word "language," and, of course, the semantics of what is called "thought."

I worked with the Double Bind Theory of Schizophrenia, for which I am largely responsible. And I would run into the

criticism: But that's silly because people don't land in schizophrenia because their mother gave them two shirts, and when the lucky individual wore one of them, she said, "I knew you wouldn't like the other." This is a canned joke, and we all laugh at it but it doesn't send people mad and put them in the lunatic asylum. Now that is because, in the phrase of another old jerk, "It wasn't the words that startled the birds but the horrible *double entendre*."

What I am trying to say is that Whorf was not talking about language as a linguist sees language — as a collection of sounds coming out of somebody's mouth or being received into somebody's ear. Ben Whorf was talking about *language* and meant by that word the process by which what comes out of the mouth was created. And this is different. Or he meant the process by which that which enters into the ear is made into language, in his sense, by the mind of the receiver. This is not the same thing as what a linguist would call language. Indeed, the linguist would always avoid any thinking if he can about the processes that go on in the speaker or in the hearer. And, still more carefully, he will avoid any thought about the processes that go on in the speaker or in the hearer. And, still more carefully, he will avoid any thought about what goes on in the relationship between the speaker and the hearer — which is where, you know, all the dynamite lies.

I don't know how to change our vocabulary to meet and/or transcend the limitations of those. I have made various efforts at various times, none wholly successful. Back in the 30s, I tried to say that we were talking about "ethos" and "eidos" and used these words to refer to systematic process in a New Guinea culture. (I myself am an anthropologist.)

More recently, I have tried to map something like Russell's Theory of Logical Types onto a theory of learning, assuming that all information whatsoever is necessarily logically typical, no doubt in many different ways, and that the basic theory underlying the difference in logical types would be the way to think about much that people are refusing to think about. I did all that in the 50s in the Double Bind Theory of Schizophrenia. We recently had a forensic conference in New York organized by the psychiatrists and called "Beyond the Double Bind" at which I was the only person that referred to, in any way, Russell's logical typing or related ideas. So that didn't work very well. I think, however, this is the right way to go about it, and in the end, the concretizers and misplaced typologists are going to have to do their homework and learn what it is about. But I have no means of rubbing their noses in it.

The other thing that I wanted to consider is your statement that, for example, acne is a single piece of behavior. You do not insist on the word 'single', but it looks like it from the way you talk, and there are implications in that assumption which are difficult. It seems fairly clear that a number of words — *play, exploration, crime, type A behavior,* and others — are, in fact, not words for items of behavior, but are words for ways of organizing behavior. You cannot tell from my putting this cup on the table whether that action is criminal or not, whether it is exploratory or not, playful or not, and so on. The words refer to the status of the action in a very complex network of relationship between the actor and his environment as that relationship is seen by the actor, or possibly by others. In other words, these are not words of the same order. The word 'explore' is not a word of the same order as 'put your nose into a box'. Psychiatrists naively have the idea that you might teach a rat not to explore by punishing it for putting its nose into a box. You cannot do that for semantic reasons connected with Russell's logical types, as already stated. And for two thousand years, the human race has thought that it could stop crime by punishing actions which it regarded as criminal; whereas what it was trying to stop was ways of organizing action, ways of integrating action, and so on, which are quite different from the identified actions upon which society was able to act as a punishing experimenter. Right. Now we return to your notion of acne as an action. Is acne an action in the sense that the rat putting his nose into a box is an action? Can we expect it to obey the same rules of reenforcement that an action will obey? If you punish acne, does it go away? And I imagine there are patients for whom this is true, and there are, of course, as you know, many psychiatrists who would believe that this is the way to deal with symptoms: one by one, piece by piece, as if the whole business were not elaborately linked together and organized.

But I am sure that for the majority of acne patients, acne does not have this characteristic of being an act which would obey the ordinary reenforcement rules. We ask then what it is. Is the word 'acne' of similar logical type to, say, the word 'exploration', the word 'play', etc. And again, I am not at all comfortable to say that it is. And what I seem to be pushed towards — my hunches may be wrong — you, obviously, know a great deal about acne, and I can only remember dimly what it was like, and I was not a very serious patient anyway — but what I seem to be pushed towards is the notion that acne, the "symptom," as the medical boys would call it, is a message comment of some kind upon some subject matter which is of the logical typing level of *exploration*, or *play*, etc. That is, we are not dealing at a straight symptom level nor at a straight message level nor at the level of organization of behavior, but at the level of names of organization of behavior: something meta- to the organization of behavior. I don't know that I can push this thinking any further at the present moment, but let me make one more try. If acne be as I suggest, a meta-comment upon, perhaps, courtship, then what of cancer? I don't see any analogue of your thing about picking on people in the case of acne that could be applied to cancer. Anyhow, this letter is now too long.

Yours sincerely,

Gregory Bateson

Ellerbroek to Bateson

4/3/78

Dear friend (and my name is Wally: we have no time to stand on formality) . . . Thank you so much for your very good and fascinating letter of 3/14: how you could write so much and so well at such a time speaks for your strength: we are, indeed, so close at times — but, at others, not so close. Our main difference, I would speculate, might be that I see 'what really happens' and 'what so-and-so said' as relevant only to a relatively minute degree in those matters with which you and I are concerned . . . and that it is the thinking *per se* that is critical. Actually, in a good many contexts I have found that paralinguistic material is more critical in affecting thought in both sender and receiver than the verbal content (as well as frequently being 'perceived' more correctly, including lapses of the tongue (so-called). Item: I call acne not a single piece of behavior, but rather suggest that a better label than 'disease' is to call it 'a thing that people do' . . . Your comment, on 'acne as a message' to me is a classification of the observer and not an attribute of the observed.

Enough philosophical mish-mash: back to cancer. I am, more than you might suspect, shocked by your news, and hasten to add that I have been investigating the phenomenon of so-called cancer miracles for some years: (1) each of these that I have collected as 'valid' examples were either terminal, inoperable, or had totally failed to respond to contemporary treatment. (2) The person had long-standing feelings of anger and/or depression. (3) They experienced a sudden 'conversion'-like feeling of overwhelming necessity to change and to totally abandon *all* 'negative' feelings about anything (including having cancer) permanently. THERE WERE NO OTHER RELEVANT FACTORS. Each of these cases medically is totally impossible, and I have collected 57 such. I am not writing to induce false hope: you already have my crazy article which does tell how to sort out and change the thoughts that need changing . . .

—Wally

P.S.: BEING picked on does not cause acne. FEELING picked on does. Does that clarify it a little? E.g., you can get acne without 'being' picked on, or if you 'are' picked on . . . that part is optional. But feeling that things should not be as you perceive them, and further feeling that in some way such things are 'aimed' at you is the sine qua non. . . . As far as I can tell about lung cancer, it is not specific (as are breast and cervix uteri malignancies): in lung cancer, it seems to be a more global rejection of many general 'realities' of the world we live in . . . e.g., wars, taxes, human stupidity, and on and on. . . .

Re Ellerbroek 1

Three cheers for Dr. Ellerbroek. I wish my dermatologist had done something more as treatment for exema during those many years I saw him as a child and adolescent than give me hydrocortisone and stick me under a sun lamp. However, although the change of perspective is in a positive direction, Ellerbroek runs into a catchy little double bind which seems to pop up a lot in the area of positive thinking and personal change.

To elaborate, the doctor in his examples is telling the patient that he should not think that what is happening to him is something which should not happen. In other words, "You are thinking that what is happening with you is wrong but you are wrong, nothing is wrong."

It takes a certain amount of unconsciousness (or something) to swallow this, but let's keep trying along these lines.

Yours,

Elissa Brown
Santa Cruz, California

Re Ellerbroek 2

Dear CQ:

I happened to watch the beginning of *Holocaust* the day after I read the article by Dr. Ellerbroek on language and disease in your Spring issue. I couldn't help wondering if Dr. Ellerbroek would have been saying as he watched it, "Those Nazis weren't picking on those Jews. Considering everything we know about Nazis, and bearing in mind that there is much we do not know, sending Jews to the gas chambers is *exactly* what they *should* have done."

Sincerely,

Phyllis Karp
San Francisco, California

Re Ellerbroek 3

. . . In 1973 my husband and I decided to take a course called Silva Mind Control. One of the themes emphasized in this course was a process called "mental house-cleaning." The purpose was to purge from our vocabulary words and phrases which lead, through repetition, to unfavorable life results. The idea is that the mind is an obedient servant possessed of no sense of humor in weighing the mental images we create (and bring into reality) by verbal repetition. Let me illustrate from things I have observed since learning this process.

A friend of ours is often heard to say "I could just sneeze over the way So-and-So behaves." This lady is a constant sinus sufferer. My mother is a classic example. Through the years I can remember endless expressions such as "You pick that up — your back bends easier than mine" . . . "Get off my back" . . . "I've had to carry the full load of . . ." — now she suffers from decalcification of the spine and has to wear a back brace.

On the lighter side is an acquaintance who used to respond to any adversity with "Oh, rats!" Do I need to tell you she had to call an exterminator?

One of my father's expressions is "You're breaking my heart" — he's had two coronaries.

We really program our children into these negativities — "If you go out without your hat you'll catch a cold." Any child who wants to please us as god-figures is going to learn how to create a cold.

In thinking back over many situations with patients (I am an R.N.) I can hear the verbalizations which set them on the road to illness. At present I am a full-time homemaker and a part-time childbirth educator. I've used a lot of positive visualization and mental housecleaning with the couples I teach and the results are beautiful. I keep hoping they'll be ready to laugh off the nurse in the labor suite who pokes her head in the door with "How far apart are your PAINS, honey?"

Are you familiar with the world of Dr. O. Carl Simonton? He has had an apparently remarkable result in cancer control and cure using the approach of mental reorganization. I first heard of him five years ago when he was at Travis Air Force Base and have heard and read of his work several times since.

Sadly, most of the reporting on the very real effects of our mental imaging and verbalizations is generally confined to such scandal sheets as the **National Enquirer** and other goodie publications found at the supermarket checkout. I firmly believe that the day will come when mankind isn't going to need us with our array of palliative pills and shots. One day we'll learn the validity of treating causes instead of symptoms.

Graduates of Silva Mind Control learn one additional tool in mental house cleaning. When my husband hears me mutter something like "I could just barf over this phone bill," he says "Cancel-cancel." Sounds silly perhaps but by helping each other to be aware of our negative verbalizations we have eliminated most if not all of them — words such as "can't," "won't," "try" instead of "shall," "dead-tired," "crazy," "drives-me-up-a-wall," "kill" etc., etc. — Once you get started it becomes amazing to note how much of our daily vernacular is illness/violence oriented. . . .

Sincerely yours,

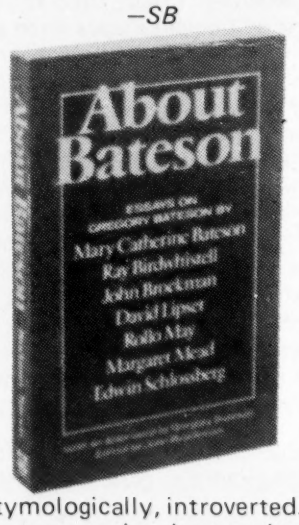
Jacquelyn M. Albert
Uniontown, Pennsylvania

About Bateson

A collection of essays taking off from experience with Bateson and his ideas — including his daughter Mary Catherine, his former wife Margaret Mead, his agent John Brockman, his biographer David Lipset (account of early Bateson family life), and colleagues such as Rollo May and Ray Birdwhistell.

—SB

About Bateson
John Brockman, Ed.
1977; 250 pp.
$4.95 postpaid
from:
E.P. Dutton
2 Park Ave. South
New York, NY 10016
or Whole Earth



A smoke ring is, literally and etymologically, introverted. It is endlessly turning upon itself, a torus, a doughnut, spinning on the axis of the circular cylinder that is the doughnut. And this turning upon its own in-turned axis is what gives separable existence to the smoke ring. It is, after all, made of nothing but air marked with a little smoke. It is of the same substance as its "environment." But it has duration and location and a certain degree of separation by virtue of its in-turned motion. In a sense, the smoke ring stands as a very primitive, over-simplified paradigm for all recursive systems that contain the beginnings of self-reference, or, shall we say, selfhood.

—Gregory Bateson

On crows counting to 7

Dear CQ:

Years ago, when I was still watching television, they had a program about shooting crows. If five farmers went into a barn full of corn and only four came out, the crows would stay away, but if nine farmers went in, and only eight came out, the crows would fly down to eat, thinking it was all clear, and could then be shot by the remaining farmer.

Since this is not firsthand knowledge, I don't expect you to publish it. But I did want Mr. Bateson to know that there has been other research into "counting crows." This particular one offering a much clearer perspective as well as a group crow experience.

D.M. Redfern
San Bernardino, California

Bateson tapes

As Stewart knows, having a conversation with Gregory Bateson is a number of levels beyond just reading the material. Part of that difference is his voice and his delivery. There is access to that part through cassette tapes, all of them lectures and all prime Bateson.

It should be noted that Bateson is an artful lecturer. He speaks slowly, doesn't use notes and keeps close to his subject, alternating principle and example in a beautiful weave of ideas. And while the number of concepts is kept brief, the lectures are pithy, requiring multiple listenings (for me) to grasp the total of what was spoken.

Another benefit from the tapes was that **Steps Toward an Ecology of Mind** became much clearer reading, as I forced myself to slow my reading rate to Bateson's speaking rate.

Above all, these lectures show Bateson to be ee cummings' "Always the beautiful answer who asks a more beautiful question."

1. "An Anthropologist Views the Social Scene," 1970, 48 minutes, No. BB 2368, $15.00.* Subject: Systemic organization and the notion of "Power." From:

Pacifica Tape Library
Dept. AN 761
5316 Venice Blvd.
Los Angeles, CA 90019

2. "Orders of Change," 1975, about 2 hours (two cassettes), $12.40 (Colorado residents add 3.5% sales tax, Boulder residents add 5.5% sales tax). Subject: What is meant by the word change. From:

Vajradhatu Recordings
(Naropa Institute)
1345 Spruce Street
Boulder, CO 80302

(Vajradhatu Recordings has another Bateson tape which I've not yet heard, entitled, "Intelligence, Experience and Evolution." Cost is $6.40 from the same address.)

3. "The Mind," 1977, No. 331, 60 minutes, $7.50.* Subject: What information gets inside you and how it gets there. From:

Cognetics
P.O. Box 592
Saratoga, CA 95070

4. "Direction and Determinism in Change," 1977, 90 minutes. You send a blank 90 (ninety) minute cassette, something to cover postage, and I'll dupe a copy for you. Subject: Among other things, how to get from here to there. From:

Bruce Umbarger
533 S. Grand No. 3
Lansing, MI 48933

All prices include postage. * indicates California residents add 6.5% sales tax.

If anyone knows of other Bateson tapes, either cassette or reel, please write me at the address in No. 4.

Bruce Umbarger

Yeah, I know a couple. Four talks of Gregory's at Lindisfarne are available. "Mind in Nature," (the original of the article on p. 4), "How We Know What We Know," "The Thing of It Is," and "Discussion with Bateson." And two from seminars at Esalen Institute, "Metaphors and Butterflies," (1976) and "Story of the Double Bind," (1977).

$6 from:
Lindisfarne Tapes
49 West 20th St.
New York, NY 10011

$7.50 from:
Workshop Cassettes
Hot Springs Lodge
Big Sur, CA 93920

—SB

Darwinian terrorists and the Lamarckian puppies

I have a friend — my boss, in fact — named McElwain, who is a Lamarckian. I was sitting by the stove with Bill and a visitor, when Bill's dog Penrod walked through the kitchen.

"How did your dog lose its tail?" the man asked. "Was it hit by a car, or what?"

"No," says Bill, "but her grandmother was."

"What?" says the man. "Are you trying to tell me this dog *inherited* the missing tail from its grandmother, which was hit by a car?"

"Something like that," said Bill. He leaned back and took a puff on his cigar. "Penrod's grandmother was hit by a car — right out here in front of the house — and we had to have her tail amputated. About a year later she had puppies —"

"—And they were all born without tails!"

"Just so. But, word about this got around, and one night a roving band of militant Darwinians broke into the house, and grafted tails onto all the puppies."

"But you cut the tails back off, and so the acquired trait was passed on."

"Why would I do a thing like that?" asked McElwain. "I let the tails stay. It was no skin off my ass.

"At any rate, we gave all the puppies away except Penrod's mother. In due time *she* had puppies —"

"And they all had tails."

"Yes."

"So the Darwinists were satisfied — things were back to normal."

"The Darwinians were fit to be tied: *They* grafted the tail onto Penrod's mother. They knew that. Thus, Penrod and her brothers and sisters had inherited an acquired characteristic. They should have been born *without* tails, as their mother was born. Those Darwinians were in a bad situation."

"So what did they do?"

"What Darwinians always do: they broke in again, and cut off the puppies' tails."

"And that's why Penrod doesn't have a tail."

"That's why Penrod has no tail — Darwinian terrorists cut it off."

The visitor, an intelligent and well-rounded local physician, looked thoughtful for a while. Finally he asked, "Did Penrod have puppies?"

"She did," answered Bill, much pleased.

"Tail-less, I presume."

"Of course."

"But the Darwinists found out."

"They always do."

"So they broke in again and —"

"Yeah but this time," said Bill, "I was waiting for them. I mean I don't really care about the tails, but I was tired of having my house broken into. So this time I stayed up with a shotgun, loaded with rock salt. And when those damned Darwinians broke in here, boy, I just let them have it. I hit one, too — I heard her yelp."

"Her?"

"Yeah, a lot of those Darwinians are women. I think it appeals to their mothering instincts. Anyway, I haven't had any more trouble with Darwinians around here — not with the dogs, or with my frogs, either."

The doctor didn't even bother to ask about the frogs — there was an excited light in his eyes.

"You know Bill," he said, "I think I may know who one of those Darwinists was."

"Really?" said Bill, quite surprised.

"Yes," said the doctor. "I delivered a baby for a young woman the other day — quite a fine girl — one of your students, in fact."

"I'm not surprised," said Bill. "Which one?"

"I won't say," said the doctor. "But I think she may have been the gal you hit."

"You saw —"

"Yes: there I was, you know, delivering her baby girl, and damned if she didn't have a tail full of rock salt."

"*She* did? Which one?"

The doctor smiled. "Both of them."

yrs

Brian Donahue
Wayland, Massachusetts

EVERYBODY ELSE'S SPACE PROGRAMS

Japan, China, Germany, Western Europe, and the U.S.S.R. And private corporations.

BY JAMES OBERG

"Humankind will not remain forever on the Earth," a philosopher once prophetically wrote, "but in search of energy and room he will at first timidly venture beyond the limits of the atmosphere and then will boldly move out and occupy all circumsolar space."

Not an American space salesman, nor a lobbyist of the space industries, nor an official of NASA – it was Konstantin Tsiolkovsky, writing in Russia at the end of the nineteenth century.

The vision of human movement into space is not exclusively an American vision, and American withdrawal from that migration – for political, economic, ideological, or theological reasons – will not stop it. Other countries, other societies, other corporate entities will pursue their own goals in space, for their own motivations.

The notion of a "Space Race," which brings a sneer to the lips of worldly-wise sophisticates, is not the issue, although "The Russians are coming!" has been a rallying cry at budget time for any federal bureaucracy that can dream up some sort of competition with Moscow. Whatever the political value of such a claim, it does not affect its essential accuracy.

The Russians are going into space. The Soviet Union has its own goals which it is pursuing, and it is quite candid about them. Within a year or two at most, Soviet cosmonauts will establish a permanent presence in Earth orbit. There will never again after that moment be a time when there are not human beings in space.

Other space-minded consortiums have formed and are beginning to flower. A West European space agency (constricted even more than NASA, if that is possible, by budgetary problems) is building Spacelab modules for use with the Space Shuttle, and the E.S.A. (European Space Agency) has its own sober plans for longer and longer Spacelab orbital sorties, leading to free-flying space stations of European (primarily German) construction and operation.

The Japanese, too, want to utilize Spacelabs bought from the Europeans and launched (for a fee) by NASA's "Space Transportation System." Plans drawn up in Tokyo recently call for Japanese industrial researchers to be in orbit within five years on dedicated Spacelab flights (dedicated entirely to Japanese use, that is, so they can keep the trade secrets and manufacturing processes to themselves).

China launched its first space satellite almost a decade ago, and it did more than play an electronic rendition of "The East is Red" at 20 megahertz. It opened the way for larger applications satellites now being flight tested, and for the (perhaps imminent) orbiting of Chinese astronauts.

National agencies are not the only spacefarers. Corporations such as Boeing, Phillips, McDonnell-Douglas, the as yet mythological "Arabian Space Corporation," the "Orbital Transport and Rocket AG" (OTRAG), and other groups see money to be made in space, and see the need for their employees to go there and make it.

The most impressive foreign space activity, of course, remains the much-maligned and much-exaggerated

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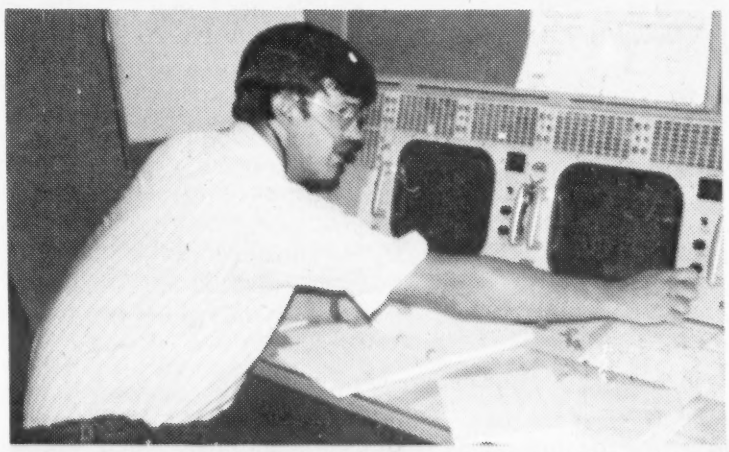
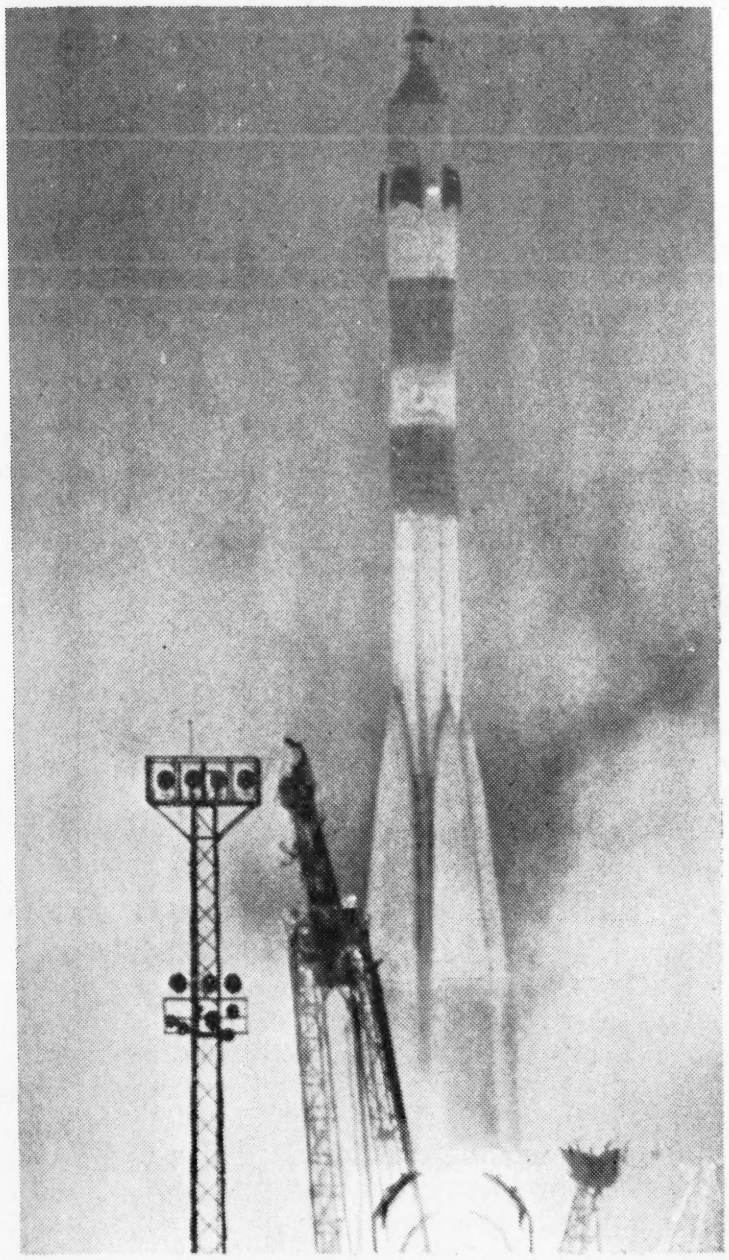
It was Nancy Wood of Seabrook, Texas, who suggested: "A good man to interview would be Jim Oberg. To the humdrum world Jim is a computer specialist at Johnson Space Center in the Shuttle Softwear Division. But after-hours he squeezes his 6'8", 245 lb. frame into the nearest phone booth and becomes SUPER-ELF! That's an ELFive enthusiast, a glib and witty free-lance writer, assoc. editor of **Space World** *mag and an authority in the field of Chinese and Russian space efforts. In view of the squelched information flow from the two countries, this is some trick. Jim and a few friends delight in announcing to the world secret Russian missions that blow up or fizzle. The Oct. 8, 1977* **Science News** *tells of Oberg's latest ploy in sleuthing out what the mysterious spreading jelly-fish sighted over Finland and Russia was. Oberg, an aerospace engineer on loan to NASA from the Air Force, won the Robert Goddard historical essay contest for 1976 for Russian space reporting."*

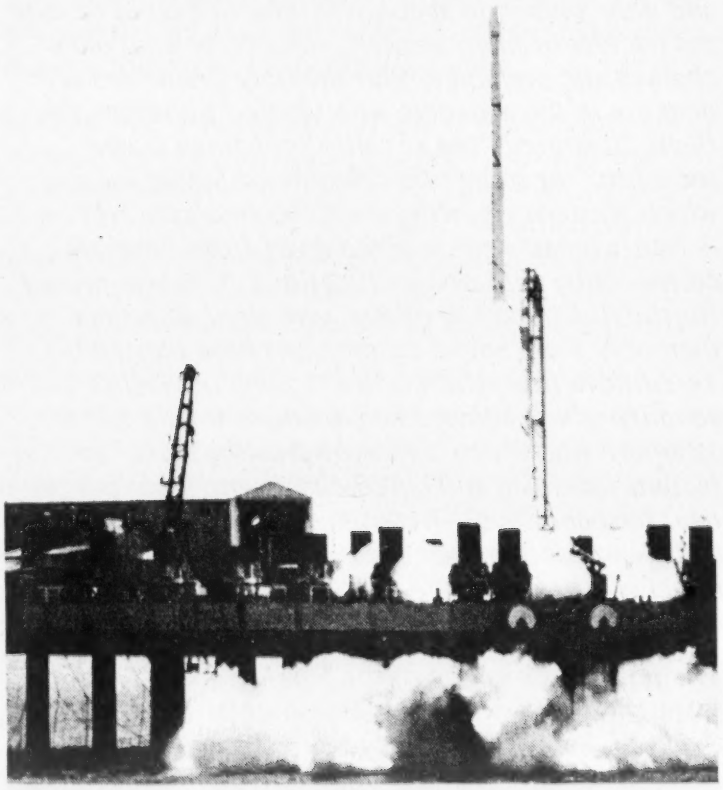


The author at his Mission Control Houston console.

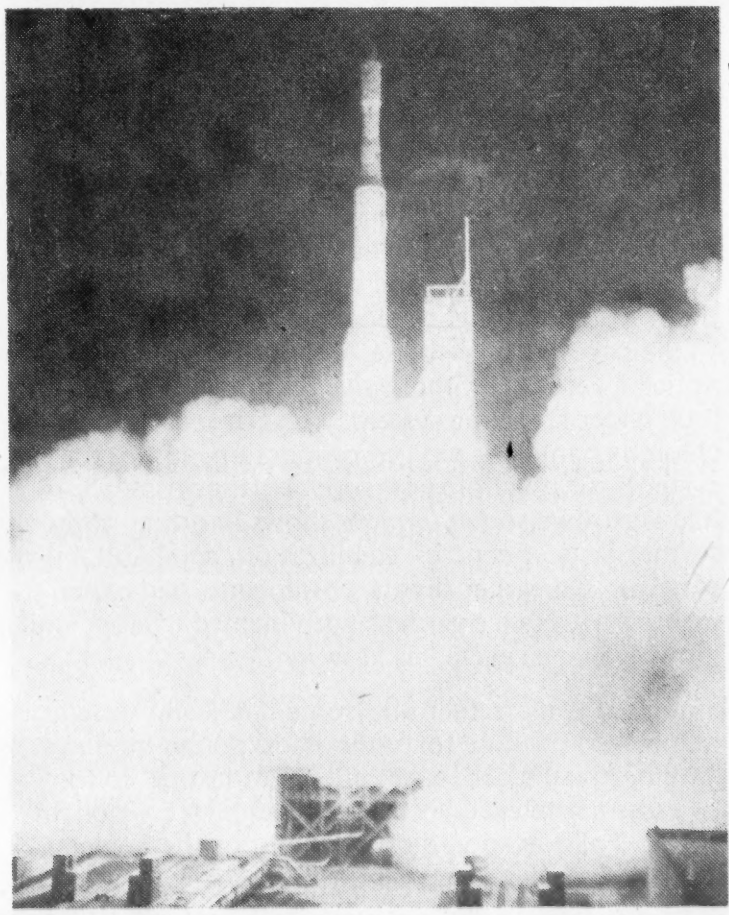


Above — Soyuz 25 cosmonauts being monitored at the Soviet flight control center near Moscow. (Both pictures — Novosti Press Agency)

Upper left — Soviet launch, with Flash Gordon styling characteristic of USSR spacecraft.

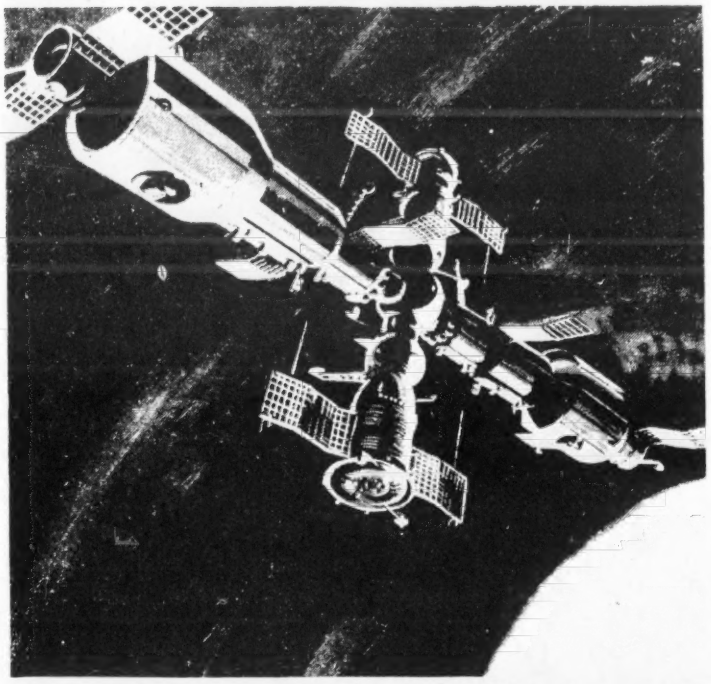


British launch from the San Marco platform off Kenya in 1974. The payload was Ariel 5, an x-ray astronomy satellite, carried into orbit by an American-made Scout. The mission was a spectacular success — over 100 papers have come out of Ariel 5's research. (From **Spaceflight**, *Feb. 78)*



1976 Japanese launch of ionosphere sounding satellite "Ume" from Tanegashima Space Center off southern Japan.

National Space Development Agency of Japan



A cluster of Soviet Salyut modules. Six cosmonauts can live and work in this space station. By 1980 the Soviets will establish continuous occupancy — a permanent presence in Earth orbit.

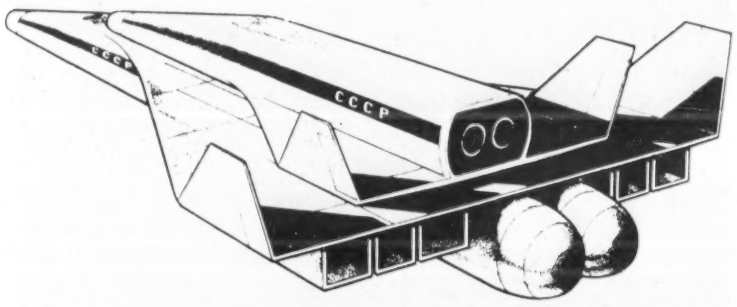
Soviet space program. There is no need to fantasize any details about their extremely impressive Salyut-6 mission, which has despite a setback or two demonstrated an entirely new generation of Soviet space capabilities. The directions indicated by these capabilities are not hard to fathom.

The Salyut-6 is a cylinder about forty feet long and twelve feet wide at its widest point. At each end is a small transfer chamber and docking unit for ferry ships from Earth. The forward transfer chamber has a hatch for exit into space by spacesuited cosmonauts; the aft chamber is surrounded by fuel tanks and rocket engines used to maneuver the station into new orbits. Three solar panels sprout from the middle of the cylinder.

Earlier this year, a series of double dockings, automatic resupply and refuelling operations, marathon space endurance runs, and space walks highlighted the flight and brought space spectaculars back, briefly, to the pages of space-blasé American newspapers. Less noticed were other impressive features — a closed loop water recycling system, a test of space-grown chlorella banks for oxygen production, advanced systems for psychological support (the cosmonauts had their own *son et lumiere* shows in orbit), and further tests of control, stabilization, and habitability systems. On earlier flights, cosmonauts had experimented with space gardens aptly-named "Oasis" units, growing green vegetables in weightlessness.

Since 1971, more than six (some failed and were not numbered) of these forty-thousand pound modules have been launched, each on a flight lasting up to two years, and each visited by a series of cosmonaut crews. Failures sporadically embarrass the Soviets but have not deterred them from pressing forward.

Oddly enough, the program seems to be two-faced, even schizoid. Two distinct types of Salyuts have



Possible configuration of rumored Soviet space shuttle "Albatross" with reusable first stage. Alternate reports say a winged re-landable spaceship will be launched by an expendable "Proton" booster.

been launched, in alternate years. Observers call one kind the "scientific" and the other kind, somewhat paranoically, "military." ("Earth observations and applications" would be a more accurate and less emotionally charged label.)

The recent successes are the results of Moscow's reaction to its space humiliations of 1968-1973, a "sputnik in reverse." The program was completely revamped, with new managers and less political interference (but not complete elimination, as we'll see), and a new philosophy: do the engineering homework, however dull.

Originally, in the heyday of the "Space Race" (say, 1957-1964), canny politico Nikita Khrushchev paid out his space budgets for stunts, and next year's money depended on this year's screaming headlines. The double Vostok shot (1962), the woman-in-space stunt (1963), and the three-in-one Voskhod shot (1964) illustrated this philosophy. By late 1964, Khrushchev had been overthrown, and the top Soviet space experts had been quite literally worked to death.

(Calling the flight of Valentina Tereshkova, the first and only woman in space, a "stunt" is bound to raise the hackles of many readers, since it reeks of male chauvinistic prejudice. But the only prejudices evident are in those people who wanted to believe the flight illustrated "the equality of women under socialism," or some other feature of Soviet society which Western countries ought to emulate. Not so — four women were selected apart from the male cosmonauts, with no qualifications. One was picked for the flight and the others were fired, and since then only male Soviet cosmonauts have blasted off. Tereshkova tours the world extolling the justice and equality which allowed her, a simple textile factory assembly worker, to climb towards the stars. Such blatant tokenism and paternalism — now her cosmonaut husband says, "We love our women very much and we are determined to protect them from the rigors of space flights" — would be roundly condemned if it occurred in the U.S.)

The primary objective of the Russian space engineers through the 60s was to send cosmonauts to the Moon, ahead of Apollo. The Race to the Moon was real, however blatantly NASA budget witnesses may have exploited it. The competition was real, and the race was not settled by more than a matter of weeks. When the Soviet thrust faltered and failed, a new tack was chosen. Moscow then claimed that it never had

planned to send men to the Moon, since if it had, it would have done so ahead of Apollo. Instead, say Moscow spokespersons, they deliberately chose to explore the Moon only with automatic probes, more cheaply, and without risk to human life. The Apollo program, impressive as a technological feat, was a wasted gesture in this view.

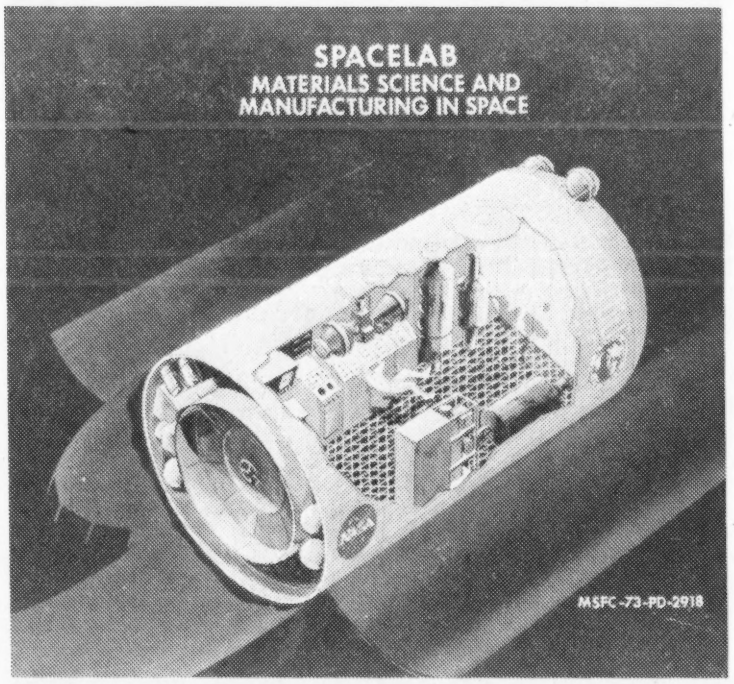
Surprisingly, both left-wing and right-wing elements in the West seized eagerly upon this line, for different reasons but both ironically coming to the same conclusion. Both were fooled – or were fooling themselves – since Moscow was lying. The Soviets had spent billions of rubles to get men out to the Moon first, but a second-place finish would have demonstrated their inferiority, so the entire program was disavowed when Apollo triumphed. (For the proof, see "Russia Meant to Win the Moon Race," **Spaceflight**, London, May 1975). For the Left, Apollo had always been resented as a diversion of resources and an activity which made Americans proud of their country when they should have been ashamed. For the Right, the Russians were peasant clowns unable even to make a television set work without stealing Japanese transistors, and had tricked the U.S. into pouring resources into a boondoggle when the money should have been spent to level Hanoi. Both points of view were grounded on fantasy.

As a fallback space spectacular, Moscow concentrated on space stations, meanwhile shooting three Soyuz ships into orbit in 1969 as a useless "three ring space circus" to assert Soviet space power. Salyut-1 was launched in 1971, but the first crew failed to reach it, and the second crew perished on their return to Earth. Additional Salyuts were launched in 1972 and 1973, under increasing Kremlin pressure to beat the American Skylab. In the six weeks prior to the U.S. launch, not one but two separate Salyut modules were launched into space, evidently as some sort of rushed space upstaging designed to demonstrate Soviet superiority in this arena of the Space Race.

Both Salyuts disintegrated in orbit, without any cosmonauts ever having been launched. Some of the Soviet spacemen were diverted to the newly agreed upon "Apollo-Soyuz Test Project," in which Soviet space engineers could demonstrate their "equality" with American counterparts, after having failed dismally to demonstrate their much desired superiority.

But then, year by year, modest and well planned Soviet space shots expanded their capabilities in a rational, building-block program. Some spectacular failures occurred – a launch failure crash landing in the rugged Altai Mountains of Siberia in 1975; a nearly fatal surprise splashdown in a salt lake during a midnight snowstorm emergency landing; and the electronic and mechanical failures which frustrated three Soyuz-Salyut dockings in 1974, 1976, and 1977. But the program was flexible and confident enough to handle these setbacks and fly backup missions quickly and boldly. By Salyut-6, the Soviet space program had matured to an amazing degree.

Spectacular political feats are not entirely absent, as the "foreign cosmonaut" program demonstrates. Beginning with Soyuz-28 in March, 1978, Soviet



The first big step beyond Skylab for the free world will be Spacelab, entirely built and paid for (and partially crewed) by a consortium of Western European nations. It will be launched in the early 1980s aboard an American space shuttle.

spaceships will be carrying one each Czech, Pole, East German, Bulgarian, Romanian, Hungarian, Mongolian, and Cuban cosmonaut into orbit. Some would dismiss these stunts as entirely political – and politically valuable they certainly are, considering Soviet needs for tight control over these nations, and considering the value of the fact that the Cuban cosmonaut will probably be black – but the feats are also symbolic of the end of the Soviet-American manned space monopoly.

True cooperation would be evident if Russia accepts guest cosmonauts from France, India, Sweden (all of which have carried out cooperative unmanned space probes), or even from the United States. (Russian cosmonauts could, in exchange, train as Space Shuttle payload specialists in Houston). The momentum of events, and purely political pressure, may bring this about.

Meanwhile, Soviet space engineers continue their homework. Mystery satellites such as Cosmos-881, Cosmos-929, and Cosmos-997 continue to baffle observers with their maneuvers, suggesting that a "space tug" (KOSMO-BUKSIR) and a space shuttle (code-named ALBATROS, according to a source in Amsterdam) are under development to support multi-modular permanent space stations by 1979-1980. Soviet space doctors say that stays of six to twelve months are physiologically possible, and desirable, and thus almost certainly imminent. The token industrial use of materials (metals, pharmaceuticals, optical glasses, and perhaps something else) processed in space is also likely to occur within a year or two, partly for the headlines and partly as demonstration that these long talked-about possibilities are becoming realities.

In Western Europe, people received a vicarious thrill from the East European cosmonauts while preparing their own spacemen for missions beginning in 1980. The European Space Agency (mostly France) is

building an expendable launch vehicle called the "Ariane," to be launched from Kourou in French Guiana, which will compete with the Space Shuttle for lucrative commercial space contracts.

If the Ariane works, it could support a modest manned program between Earth and free-flying Spacelab modules launched by the Space Shuttle (or, barring that, by Soviet rockets.) The industrial use of space conditions has really excited European organizations, and at present a joint U.S.-Europe program has been worked out. (Few people know that the much-advertised Spacelab module is in fact being developed and paid for entirely by European countries in ESA.) An independent program would at first cost more, but the development of an all-European Space Shuttle would cost less than was spent on the Concorde – with much more chance of economic success.

The Japanese want to participate, too, sometimes in concert and sometimes (when it involves industrial processes in orbit) alone. Japan is already building and launching improved copies of the basic Thor-Delta satellite launcher, and larger boosters are on the drawing boards if transportation cannot be obtained from the U.S. or the U.S.S.R. While purely scientific probes into orbit, to the Moon and to the planets are all scheduled, the main Japanese interest is in the exploitation of near-Earth space by Japanese astronauts on a space station.

China's practical motivations for its space program are compelling and logical. It needs a military reconnaissance capability and has been experimenting with six thousand pound space spy satellites since 1974. It needs weather satellites and communications satellites, either leased from Western space industries or home-grown.

And China could not tolerate the Soviet Union launching the first Asian spaceman, when the Soviet-sponsored Mongolian cosmonaut blasts off sometime in 1980-1981. Long before then, a Chinese space pilot may have made a brief up-and-down suborbital hop, or may have ridden into orbit as a pilot of a three or four ton space photographic mission. For the applications China has in mind, manned vehicles may be cheaper and more reliable than automatic satellites.

Governments have been the only entities in the space business so far, but if there's money to be made, corporations will find a way. Space transportation is already lucrative, while space industrialization promises to revolutionize manufacturing processes as well as open up a spectrum of new services which inevitably will create new markets or squeeze out old ones.

Boeing, for example, has a warehouse full of obsolete Minuteman rocket stages, potentially usable to launch a customer's satellite. Without fanfare McDonnell-Douglas has already done exactly that: it contracted with a communications satellite company (Western Union) to develop a new version of its own Thor-Delta rocket and to launch the satellite for Western Union in late 1975, without NASA or U.S. Government involvement except as a renter of a launch pad

Заветное желание. Рис. Ю. Черепанова.

Moscow has unleashed a violent propaganda campaign against OTRAG. Here, in **Pravda**, *NATO militarists and South African racists gloat over stabbing Africa in the heart with OTRAG rockets.*

at Cape Canaveral. Launch pads are also for rent at Kourou, and in South America, and at the Italian rocket platform off Kenya, and in Australia. And additional launch sites could easily be built.

One company is trying that latter approach. A West German group called OTRAG has developed a new rocket design which it claims can launch satellites more cheaply than the Space Shuttle or the Ariane or the Soviet "Proton." The booster involves cheaply made but reliable expendable rocket stages.

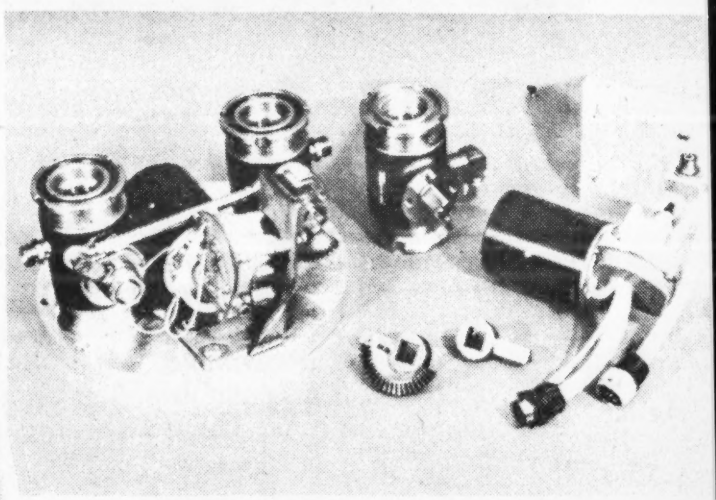
The project requires a launch site near the equator, so OTRAG officials negotiated with several countries and ultimately signed an agreement early in 1976 with the government of Zaire. (Actually, they signed with President Mobutu, which amounts to much the same thing.) In May 1977 the first test firing was made from a high plateau overlooking the Luvua River, just west of Lake Tanganyika.

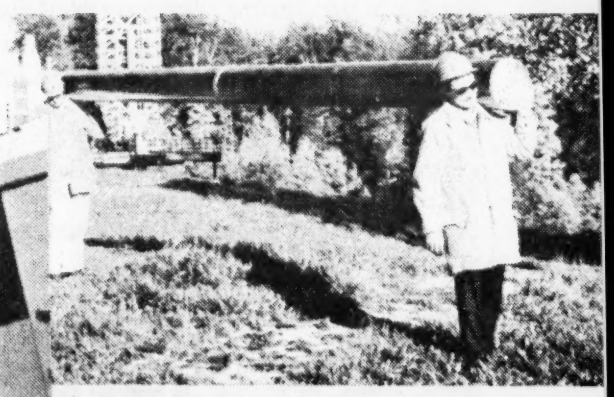
It hit the fan, as they say. Slowly, momentum built up in left-wing regimes and publications to denounce the OTRAG installation as "a nuclear rocket base threatening the liberated zones of Africa." The magazine **Afriqu-Asie**, East German official organs, and some West German underground newspapers all began screaming that a neo-colonialist NATO plot was being hatched against Mozambique and Angola. The South Africans were, the accounts suggested, "very interested" in the OTRAG developments.

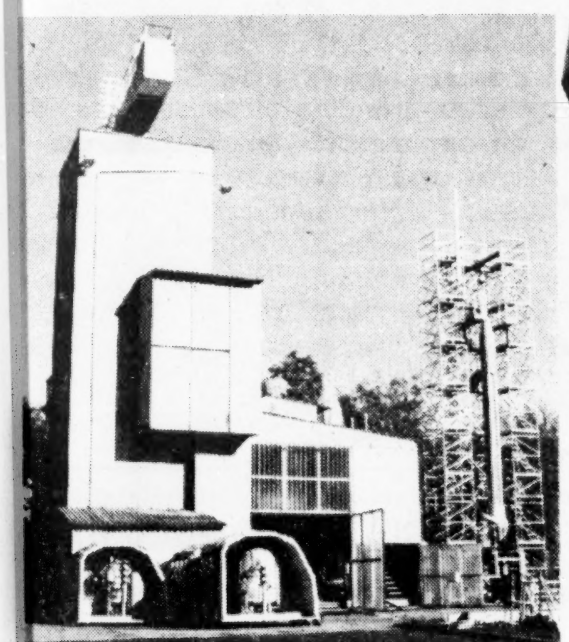
This campaign reached a climax in the March 1978 issue of **Penthouse** (no pun intended). Ex-NY **Times**

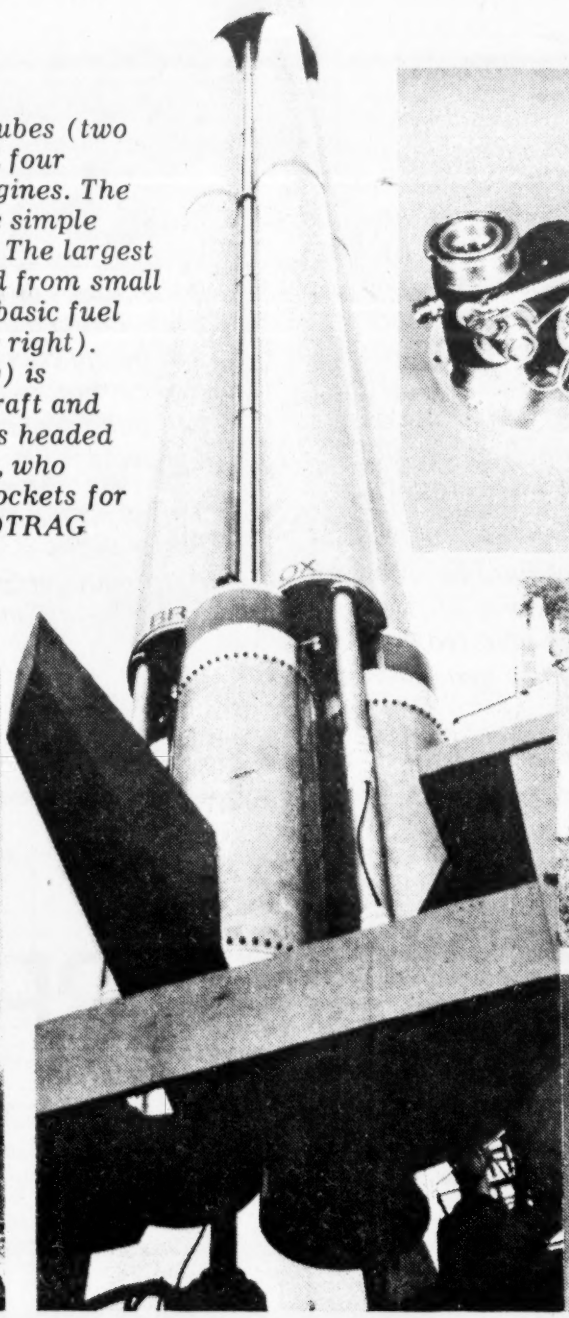
OTRAG'S modular rocket

The rocket consists of modules of four tubes (two of each of kerosene and nitric acid) and four engines (right). Each tube feeds two engines. The only moving parts in the engines are the simple electromechanical valves (upper right). The largest rocket will, OTRAG hopes, be assembled from small modules which are easy to transport. A basic fuel tank can be carried by two men (middle right). Indeed, the entire launch station (below) is portable, and could be loaded on to aircraft and moved to another country. The project is headed by two men (bottom right), Kurt Debus, who directed the world's first tests of large rockets for Nazi Germany (left) and Lutz Kayser, OTRAG president (right)









*This graphic and caption was lifted in its entirety from "Volksraten for the Third World," **New Scientist**, 23 March 1978. According to the detailed article OTRAG (Orbital-Transport-und-Raketen-Aktiengesellschaft) launches will cost half as much as NASA's — $10-15 million apiece instead of $20-30 million. OTRAG expects 10 launches a year by 1981, and profit for the company after the 25th launch. Kurt Debros was Director of the Kennedy Space Center until 1975.*

staffer Tad Szulc (pronounced Schultz) breathlessly revealed that Pentagon-supplied technology was allowing the West German army to develop "cruise missiles" at this secret rocket test center. The satellite story, Szulc asserted, was just a coverup, and highly-placed U.S. and West European sources had confirmed the plot. Once again, the CIA was messing around.

Somebody was messing around, and Szulc's article accidentally spilled the beans as to who it was. Although he claimed that all of his inside information came from Western sources, he happened to misspell his German names in a uniquely Cyrillic style, as if the words had been transliterated into Russian and then back into Latin letters before Szulc had obtained them. Watching the propaganda campaign mounted in **Pravda**, and the echoes of this campaign in client news media overseas, a suspicion has dawned that the old KGB "Department of Misinformation" latched on to the OTRAG affair as a useful tool with which to flog the Europeans in Africa and the West Germans in the Soviet domestic press.

The accusations about military tests are generally considered absurd by rocket experts — but then, so are OTRAG's claims of a breakthrough in space transport economy. (If it is true, it would be worth millions, since most Western satellites are launched by paying commercial customers already.) Perhaps OTRAG's rocket will work. More likely, say insiders, the entire operation is a majestic cosmic con game, or a tax dodge for West German investors, or an ego trip for the OTRAG managers.

Whatever the fate of OTRAG, or the Japanese dreams for space secrets, or the Chinese astronaut, or the Soviet permanent space station program, or the miserly but technically impressive Western European space efforts, one thing should be evident. The space scene overseas is tumultous, potentially powerful, and as dedicated (or more so) than the American program.

When needed, these other nations have cooperated with American space efforts, much to the betterment and benefit of both sides. As of now, American space technology is probably more advanced overall than anyone else's, but it would only be a matter of time, money, and commitment before the gap left by America's withdrawal from the arena would be filled by other more eager, more visionary players. ■

This is a demanding format for proposal writers. It's a "prospectus," the most conservative conceivable format. The prospectus is used by the financial community to raise investment money for new and existing businesses. Its content is dictated by the Securities and Exchange Commission (SEC) and regulated by legislation. Its careful wording is designed to protect the most innocent investor from being misled, and the SEC requires that everything written be cautious, underplayed and ultra-conservative. For an idea as wild and wooley as financing space colonies, this reflects awesome restraint. It's exciting reading.

Basler is proposing that a mutual fund be created in which investors buy their initial shares of stock at $23.00. This money will then be invested in existing U.S. companies that are expected to benefit from early space exploration and the money will be allowed to grow for awhile. If it grows, Basler expects the fund to attract more investors. He hopes for fast growth and to attract lots of investors. He also wants some of the dividend income from the mutual fund portfolio to be used for research in space colonization. Basler's ultimate hope is that the mutual fund will be big enough (many billions of dollars) to grow from a mutual fund into an operating business that will build space colonies using the money raised over the years it was a mutual fund.

*This proposal first appeared as a paper by attorney Basler at the 23rd Annual Meeting of the American Astronautical Society — "The Industrialization of Space" — in San Francisco, October 1977.**

—Michael Phillips

*Full proceedings of "Industrialization of Space" available for $45 (Vol. 1) and $40 (Vol. 2) from: Univelt, Box 28130, San Diego, CA 92128.

PRIVATE ENTERPRISE IN SPACE VIA STAGING COMPANY

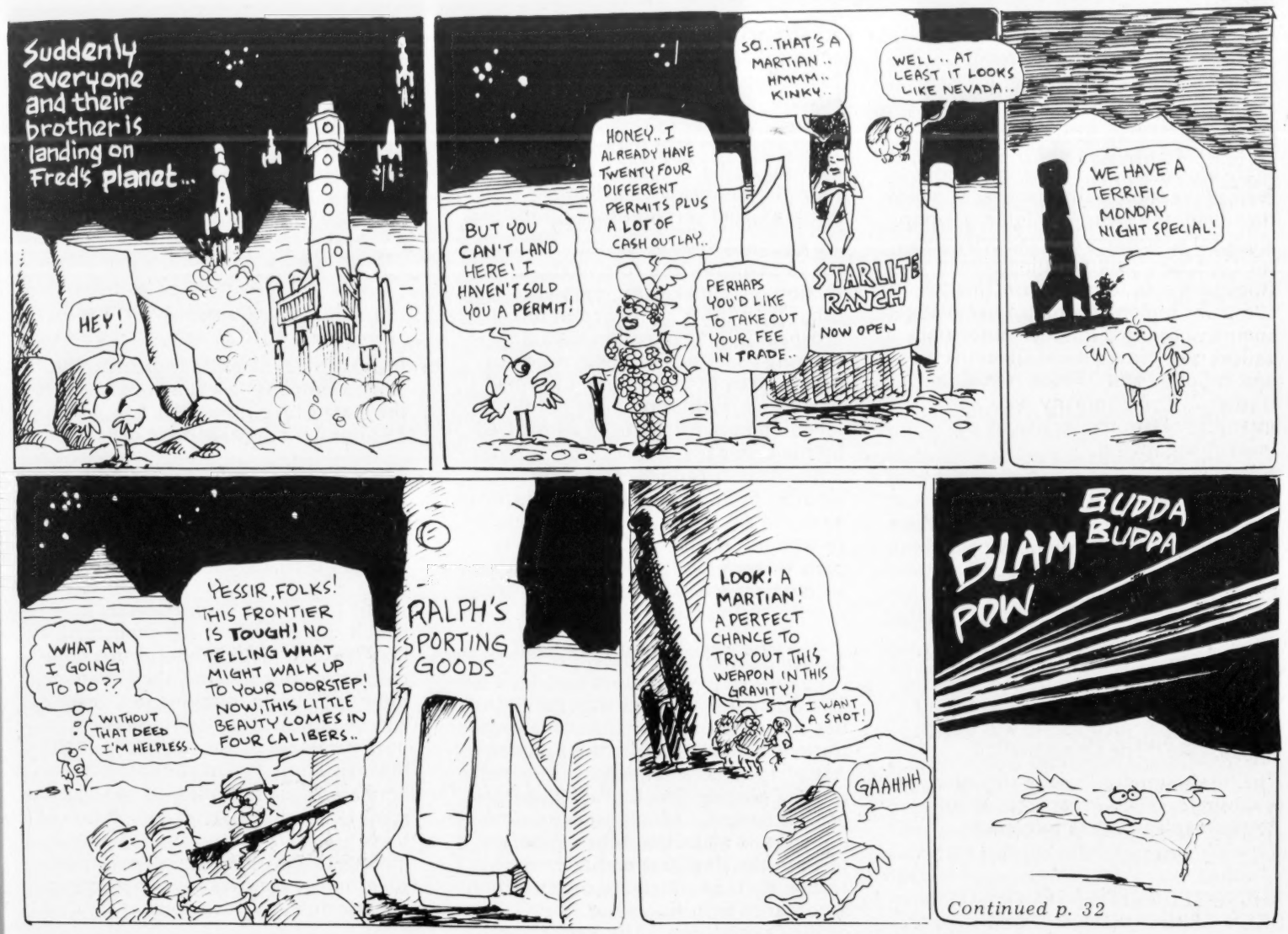
BY CHRISTIAN O. BASLER

No existing private enterprise business structure is suited to the task of raising and managing the capital necessary for full-scale space industrialization. Existing companies cannot undertake the necessary research and development because of the effect it would have on their present earnings and because of antitrust problems, and a new conventionally organized company would be unable to raise the necessary capital. This paper analyzes these problems and proposes a new type of business structure, called a "staging company," as a solution. A staging company is a closed-end management investment company that converts to an operating company after its research and development have brought space industrialization to the point of full commitment. As an investment company it would accumulate capital and invest in the securities of companies likely to profit from space industrialization and would spend the income from its investment portfolio on research and development, to be contracted out, for the most part, to these same companies. The object of the research and development would ultimately be firm bids for the systems being developed. Until it has accumulated enough capital, through a series of public offerings and appreciation of its portfolio investments, to proceed with full-scale space industrialization, the investment company would spend only the income from its portfolio on research and development. The effects of a private enterprise approach on space community planning are also discussed.

LIMITATIONS OF EXISTING PRIVATE ENTERPRISE BUSINESS STRUCTURES

Space industrialization presents a unique challenge to private enterprise capitalism. We have made enough progress with the technology to see that space industrialization might yield the highest return on investment of any large investment alternative available, but we are unable to proceed for lack of a business structure to raise and manage the required capital. This paper proposes a new type of structure to meet this challenge and explores some of the ways a free enterprise approach could affect space industrialization and space communities.

The special problems of space industrialization as a private capital venture place rather heavy demands on the design of its business structure. Some consideration of these problems will help us to appreciate the nature of the proposed solution. The magnitude of overall investment before payout is probably in the neighborhood of $60 billion to $100 billion. This is only a little lower or higher than the total assets of AT&T, presently the world's largest corporation, but it is ten times the cost of the proposed gas pipeline from Alaska, which may someday be the world's largest single construction project. Clearly, no existing corpora-



Faithful readers with good memories will recall (from Fall '76 and Fall '77) that Dan O'Neill's Fred and Hugh got to Mars by stowing away aboard Viking. Early on, Fred, in a fit of entrepreneurship, got a native Martian to sign over title to Mars (in exchange for a ball-point pen), but then during a neurotic monologue Fred LOST THE DEED. With the arrival of competition, our story continues. . . .

—SB

tion, or even a small group of existing corporations, can finance space industrialization from retained earnings. Outside financing is required.

The diversity of technologies required is beyond the capability of any single corporation, but the complexity makes central planning and direction by a single entity highly desirable. Further, research and development expenses related to many systems essential to space industrialization cannot be justified by existing corporations acting individually because development could only be profitable within a context of full-scale space industrialization. On the other hand, the uncertainty and high risk involved make it unlikely that a new conventionally organized corporation could raise venture capital to finance enough of the research and development to reduce the risk to the point where sufficient additional capital could be raised to bring space industrialization to the point of profitability. A new corporation would also be unable to get other corporations to share the research and development expenses because it would lack the financial resources to make any promises about eventual profitability.

Existing corporations cannot combine in a joint venture to carry out full-scale space industrialization because their present stockholders would not be willing to sacrifice earnings to the extent necessary, and because these companies would violate the antitrust laws if they agreed on a cost effective division of the production of the various systems involved. The Catch 22 of space industrialization appears to be that the possibility of extraordinary profits needed to attract the high risk venture capital would, if actually realized by a group of companies acting together, eventually invite an antitrust attack. The potential investor is not likely to view the level of profits that would withstand such an attack as worth the risk.

No business structure now in existence can meet the needs of space industrialization. From the history of new ideas, of which space industrialization is a good example, we know that if a new idea is to have any chance of success, it must at least appear to be made up of standard components and must be describable in familiar terms. To demonstrate that this test can be met by the new business structure proposed by this paper, it is set out in the form of the first part of a fairly conventional preliminary prospectus for a hypothetical "International Satellite Industries Inc." International Satellite Industries Inc. may appropriately be called a "staging" company because it performs the function of a staging area, accumulating in safety the amount of capital needed to minimize the risk of a planned assault. A prospectus is the basic document relied upon by people investing in a new company, and a "preliminary" prospectus is one filed with the Securities and Exchange Commission and circulated to potential investors in advance of the effective date of a public offering. To a large extent, the success of space industrialization may depend upon how convincingly we can describe it in a series of such prospectuses.

THE NEW BUSINESS STRUCTURE: A "STAGING COMPANY"

Preliminary Prospectus
Dated _____, 1978

International Satellite Industries Inc.
1,800,000 Common Shares

International Satellite Industries Inc. (the "Company") is a new, closed-end, non-diversified management investment company. Its primary investment objective is to seek a high level of capital gains by investing in securities of corporations likely to profit from space industrialization and spending the income from its investments on the research and development necessary to make space industrialization economically feasible. See "Investment Objectives and Policies."

So long as it remains an investment company, the Company intends to spend all of its income from investments, including net realized capital gains, on research and development. When in the opinion of the Company space industrialization becomes economically feasible with the level of assets then held, the Company intends, upon approval of holders of a majority of the Company's outstanding common stock, to cease to be an investment company and to become an operating company engaged in space industrialization. See "Investment Objectives and Policies" and "Space Industrialization." The Company does not intend to retain the service of an investment advisor.

Prior to the date of this Prospectus, there has been no public market for the Company's Common Stock. After this offering, the Common Stock will be traded in the over-the-counter market. If and when the listing requirements of the New York Stock Exchange are met, which will not occur for at least one year, the Company intends to apply for the listing of its Common Stock on that Exchange. There is no assurance that such listing will be obtained. See "The Company."

The minimum purchase in this offering is 40 shares. This Prospectus should be retained for future reference.

THESE SECURITIES HAVE NOT BEEN APPROVED OR DISAPPROVED BY THE SECURITIES AND EXCHANGE COMMISSION NOR HAS THE COMMISSION PASSED UPON THE ACCURACY OR ADEQUACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENCE.

	Per Share	Total
Public Offering Price (1)	$25.00	$45,000,000
Underwriting Discount (2)	$ 2.00	$ 3,600,000
Proceeds to the Company (1) (3)	$23.00	$41,400,000

(1) The Company has agreed to sell to the Underwriters up to 180,000 additional shares of its Common Stock, at $23.00 per share, to cover over-allotments, if any. To the extent any of these shares are purchased, the total Public Offering Price, Underwriting Discount, and Proceeds to the Company will be correspondingly increased. See "Underwriting."

(2) The Company has agreed to indemnify the Underwriters against certain liabilities. See "Underwriting."

(3) Before deducting expenses payable by the Company, estimated at $200,000.

Shares offered hereby are offered subject to prior sale, delivery to and acceptance by the Underwriters, the approval of their counsel, the delivery to the Securities and Exchange Commission, pursuant to Section 14(a)(3) of the Investment Company Act of 1940, of a certified Balance Sheet showing that $100,000 has been paid in to the Company (see "Underwriting") and certain other conditions.

No Dealer, salesman or other person has been authorized to give any information or to make any representation, other than those contained in this Prospectus, in connection with the offering contained in this Prospectus, and, if given or made, such information or representation must not be relied upon as having been authorized by the Company or the Underwriters. This Prospectus does not constitute an offer by the Company or any Underwriter in any jurisdiction to any person to whom it is unlawful for the Company or such Underwriter to make such offer in such jurisdiction.

The Registration Statement

The Company has filed with the Securities and Exchange Commission a Registration Statement under the Securities Act of 1933, as amended, with respect to the Common Stock of the Company offered hereby. This Prospectus does not contain all of the information set forth in the Registration Statement, certain parts of which are omitted in accordance with Rules and Regulations of the Commission. The Registration Statement may be inspected at the principal office of the Commission at 500 North Capitol Street, N.W., Washington, D.C. 20549 and copies thereof may be obtained from the Commission at prescribed rates.

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Until _____, all dealers effecting transactions in the Common Stock of the Company, whether or not participating in this distribution, may be required to deliver a Prospectus. This is in addition to the obligation of dealers to deliver a Prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

IN CONNECTION WITH THIS OFFERING, THE UNDERWRITERS MAY OVER-ALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE COMMON STOCK OFFERED HEREBY AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

The Company

International Satellite Industries Inc. (the "Company") was incorporated in the state of New York on _____, 1977 and has its executive offices at _____, New York, NY 10005.

The Company plans eventually to construct and sell, lease or operate large industrial and scientific structures in space and to construct and sell or lease large space habitats in which space workers and their families may live. Immediately after the completion of this offering, the Company intends to begin lobbying in Congress and in various state legislatures to obtain passage of the necessary enabling legislation and to conduct preliminary studies of research and development alternatives. After completion of these preliminary studies the Company intends to contract with corporations, government agencies and other entities for research and development.

Until the risks of space industrialization have been reduced to an economic level acceptable to the Company and firm bids have been received by the Company from responsible entities for construction of the various systems involved in space industrialization, the Company will be operated as a closed-end, non-diversified investment company and only the income from its investments, including net realized capital gains, will be spent on space industrialization. See "Investment Objectives and Policies" and "Solicitation of Estimates and Bids."

Additional capital of between $60 billion and $200 billion will be needed to bring space industrialization to a point where significant earnings may be realized, and there is no assurance that such capital can be raised or that earnings will ever be high enough for the Company to be profitable. Many political, economic, technological and environmental uncertainties lie between the Company's present activities and profitability, and an investment in the Company should be considered to be highly speculative.

The Company may be an appropriate investment medium for investors who desire to participate in a relatively low risk portfolio consisting primarily of equity securities of aerospace and space oriented industrial corporations but who are willing to take a relatively higher risk with the income from such portfolio in anticipation of profits that may be realized from a new high risk enterprise. There can be no assur-

ance, however, that the Company's investments will not decline in value or that they will generate enough income to conduct the research and development thought by the Company to be necessary, and there can be no assurance that the Company's long-range plans will ever be realized or that the long-range net return on investment will ever equal or exceed that which could be obtained through other investment or savings vehicles. The Company is not intended to constitute a balanced investment program and is not designed for investors seeking near-term income or capital appreciation.

Commencing approximately three months after this offering, the Company will make monthly distributions of substantially all of its net ordinary income remaining after payment of research and development and administrative expenses. The Company will make distributions annually of substantially all of the excess of its net realized capital gains, if any, over its net realized capital losses, if any, remaining after payment of research and development and administrative expenses. The Company does not intend to offer a dividend reinvestment plan. The dividends and short term capital gains distributions, if any, paid to investors by the Company are taxable as ordinary income and do not qualify for any special Federal or State tax treatment or deductions. See "Federal Tax Information."

As a closed-end investment company, the Company differs from an open-end investment company in that its shareholders will not have the right to require the Company to redeem their shares and the Company will not continuously offer its shares for sale to the public. Historically, shares of closed-end investment companies have sold at market prices varying from their net asset values, frequently at a discount, but occasionally at a premium over their net asset values. See "Net Asset Value."

There has not previously been any market for the Common Stock of the Company [Names of dealers or underwriters] have indicated that they intend to make a market in the shares so long as they are traded only over-the-counter, and other dealers or underwriters may also make a market in the shares. There can be no assurance of any such market or of the extent of any such market.

The Company intends to apply for the listing of its shares on the New York Stock Exchange as soon as practicable after the sale of the shares offered hereby. As prerequisites to such listing, the Exchange requires, among other things, evidence of satisfactory distribution of the Company's shares and evidence that the proceeds of this offering have been substantially invested. No assurance can be given that such listing will be obtained. A shareholder who sells shares of the Company will be required to pay any commissions and any transfer taxes applicable to such a sale.

Although the Company is not required to redeem shares, it is permitted to repurchase shares of its Common Stock in the open market, subject to compliance with applicable laws. Under the Investment Company Act of 1940, the Company must meet certain notice requirements prior to such purchases, and, if shares are purchased on other than a securities exchange, would also be required, among other things, to purchase the shares at a price equal to the lesser of market value or net asset value. Such purchases may be made by the Company if deemed advisable by its Board of Directors.

Space Industrialization

Many industrial processes can theoretically be performed more efficiently in space than on the surface of the earth. The Company is considering those for which the gain in efficiency might offset the cost of building and operating production and transportation facilities in space.

The most significant industrial facilities now planned by the Company are for the manufacture of Satellite Solar Power Stations for the conversion of solar energy to microwave energy to be transmitted to stations on the earth's surface for conversion to electricity. Other industrial uses of space for which the Company intends to provide facilities include the manufacture and servicing of communications satellites and the manufacture of special items such as electronic components and pharmaceuticals. The Company also intends to provide facilities for private and government sponsored scientific research such as the search for extraterrestrial intelligent life.

The Company believes the most economical way to build large facilities in space is to utilize lunar or asteroidal materials for construction. The following description of space industrialization presents the Company's program as specifically as possible at the present time. Though it incorporates the use of lunar or asteroidal materials, the Company is not committed to this approach or to any particular technology involving it, and use of terrestrial materials exclusively will also be pursued. The Company's program as described below will require major technological development in many areas, including space propulsion systems, ore processing in space, fabrication of large space structures, mass drivers, solar power conversion and microwave transmission and conversion to electricity.

It is contemplated that the Space Shuttle now being produced by Rockwell International Corporation as prime contractor for the National Aeronautics and Space Administration (NASA) will be an adequate vehicle for transportation of people and material to low earth orbit in the near term. Research and development on more efficient heavy lift low orbit vehicles is now being funded by NASA, and the Company intends if possible to rely primarily on this work for any increase in efficiency of transportation to low earth orbit. If, however,

Space shoppe

CQ,

I would like to pass on to you and possibly your readers an idea whose time is NOW. Shopping malls are crying out for specialty shops devoted to astronomy and space material. The only way you can get 98% of what would go in this shop is by mail-order. I picture this shop (call it SPACE & TIME or OTHER-WORLDS BAZAAR or whatever) being designed to be a Star Wars-like experience just to walk into. The possible material for the shop is endless – space maps & globes, kits of all kinds like 3-dimensional mockups of the solar system and electronic possibilities to the extent of building a "space" room in your house complete with planetary ceiling, space clothing, sci-fi material, etc. I could go on indefinitely because I just know it'll work. It would be a profitable enterprise for someone out there, as well as being an important contribution to the vital need to "popularize" the fact that this is the space age. I only wish I was in the position to do it.

Cosmically yours,

John F. Bye
Dade City, Florida

Box 428, Sausalito, California 94965

it becomes apparent that a more suitable heavy lift vehicle is needed and will not be developed by NASA or some other entity in time for the later stages of space industrialization, the Company may spend its own funds for such development.

Once material has been placed in low earth orbit, it will be transported to higher earth orbit or beyond by means of a Space Tug to be developed by the Company if not by NASA or some other entity. One technological approach to Space Tug design the Company intends to pursue is the use of material from the Space Shuttle fuel tank as reaction mass for an electromagnetic mass driver engine. The Space Tugs will be built on the earth's surface and transported to low earth orbit for assembly.

If asteroids are to be used for construction material, a Space Tug may be used to bring them back to earth orbit by using part of the asteroids themselves as reaction mass.

If lunar materials are to be used for construction material, a Space Tug would transport a mining facility to the moon. This facility would consist of a Lunar Lander to transport material from lunar orbit to the surface of the moon, a Lunar Mining System and Life Support System and a Lunar Mass Driver. The Lunar Mass Driver would be an electromagnetic device designed to propel lunar ore from the moon's surface to a Mass Catcher at a collection point in space.

Workers assembling and operating the Mass Catcher and Material Processing Plant will live in a small structure called Construction Station I which will have manufacturing facilities adequate to manufacture, partly from processed asteroidal or lunar ore, a larger structure called Construction Station II. This will contain Satellite Solar Power Construction Facilities and General Space Manufacturing Facilities and will eventually have facilities adequate for constructing a Permanent Space Habitat I.

It is presently contemplated that the Company will retain ownership and operational control over its Space Tugs, Lunar and Asteroidal Mining Facilities, Satellite Solar Power Construction Facilities and some General Space Manufacturing Facilities. Satellite Solar Power Stations and some General Space Manufacturing Facilities will be sold or leased. Space Habitats will be sold or leased to the inhabitants. Purchasers and lessees may include non-United States nationals.

Investment Objectives and Policies

The Company believes that the minimum amount of capital necessary for profitable industrialization of space with available and near-term technology is between $60 billion and $200 billion to be spent over a fifteen to twenty-five year period. The Company intends to raise this amount through a series of public stock offerings and other financings and to use the proceeds as follows:

Present Offering. Stock offering of 1,800,000 shares at $25 per share for a total of $45,000,000. The proceeds of this offering, less underwriting discounts of $3,600,000 and expenses of approximately $200,000, will be invested in the common stock and other equity securities of those corporations deemed by the Company to be most likely to profit from space industrialization.

Future Offerings to Date of Bid Acceptances. Immediately after bids are accepted for any subsystem, the Company plans to sell its investment portfolio and change from an investment company to an operating company, which change will, under the Company's Certificate of Incorporation, require a majority vote of the Company's shareholders. The Company plans then to raise the additional capital needed to complete its space industrialization program through a combination of equity and debt financing and advance payment on future sales of Satellite Solar Power Stations.

Though there are many obstacles in the path of the Company's plans and there can be no assurance that the above method of financing will be successful, the Company believes that

Home, Home on Lagrange

by Bill Higgins & Barry Gehm

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Oh, give me a locus where the gravitons focus
Where the three-body problem is solved.
Where the microwaves play, down at three degrees K,
and the cold virus never evolved.

CHORUS:
Home, Home on LaGrange,
Where the space debris always collects.
We possess, so it seems, two of man's greatest dreams,
Solar power and zero-gee sex.

We eat algae pie, our vacuum is high,
our ball-bearings are perfectly round.
Our horizon is curved, our warheads are MIRVed
And a kilogram weighs half a pound.

CHORUS

You don't need no oil, nor a tokamak coil
Solar stations provide Earth with juice.
Power beams are sublime; so nobody will mind
If we cook an occasional goose.

CHORUS

I've been feeling quite blue since the crystals I grew
Became too big to fit through the door.
But from slices I sold, Hewlett-Packard, I'm told,
Made a chip that was seven foot four.

CHORUS

If we run out of space for our burgeoning race,
No more Lebensraum left for the Mensch,
When we're ready to start we can take Mars apart,
If we just find a big enough wrench.

CHORUS

I'm sick of this place, it's just McDonald's in space,
And living up here is a bore.
Tell the shiggies "Don't cry," they can kiss me goodbye,
'Cause I'm moving next week to L4. ■

this method will make it possible to accumulate the capital needed for a space industrialization program into one central entity (the Company) and at the same time facilitate the raising of capital by potential system and subsystem contractors. This method could eventually enable and encourage contractors to bear the risk of some of the advance research and development connected with bids. The mechanism should, in the opinion of the Company, create an interaction between the market price of the stock of the Company and that of potential contractors. If investors feel that the Company's space industrialization program is sound, they should respond favorably to the Company's investment decisions. This could lead to an increase in the market price of the stock of the Company. The increase in asset value of the Company could then in turn lead to increased public acceptance of the probability that the Company will in fact accumulate enough capital to complete its space industrialization program. Investor confidence in the Company's ability to complete its program successfully must, however, ultimately rest on the Company's ability to gain a strong competitive position through patents and technical and organizational know-how. There is no guarantee that this can be accomplished by the time space industrialization becomes technically and economically feasible for potential competitors.

Solicitation of Estimates and Bids

The Company intends to use the income from its investments to obtain firm bids from responsible contractors. To the extent necessary, the Company intends to pay for the basic research and development upon which contractors may base fixed-price bids. It is intended, however, that acceptance of bids be delayed only until the research and development risks on all systems have been reduced to a level at which some contractor is willing to bid a price low enough for each system, when considered together with bids for all other systems, to justify the overall investment.

It is thus intended that a substantial part of the risks of space industrialization will be borne by the contractors. As explained under "Investment Objectives and Policies," the Company's investment program is designed to assist potential contractors in raising the risk capital necessary to make their participation possible.

From time to time the Company intends to publish the low bids it has received in prospectuses offering shares of the Company's stock. See "Investment Objectives and Policies." Until such time as firm bids are received, the Company intends to publish estimates received from corporations that have expressed an interest in bidding in the future and, absent such estimates, to publish the Company's own estimates based on its own evaluation of relevant data.

The following estimates are based entirely on the Company's evaluation of published studies:

	COSTS ($billion)					
	1978		1979		1998	
System	R&D	Constr.	R&D	Constr.	R&D	Constr.
Ground Control						
Space Shuttle						
Heavy Lift Low Orbit Vehicle						
Space Tug						
Space Passenger Vehicle						
Lunar Lander						
Lunar Support System						
Lunar Mining System						
Lunar Mass Driver						
Mass Catcher						
Asteroid Selection						
Asteroid Delivery						
Material Processing Plant						
Construction Station I						
Construction Station II (including Satellite Solar Power Construction Facilities and General Space Manufacturing Facilities)						
Total Cost less cost of Lunar Systems						
Total Cost						
Cumulative Total Cost						

Costs shown in this table include for each system the allocated operational costs of other systems as follows: Ground Control, $ per day; Space Shuttle, $ per metric ton to low earth orbit; Space Tug $ per metric ton from low earth orbit to geosynchronous orbit; Space Passenger Vehicle, $ per person from low earth orbit to geosynchronous orbit; Lunar Lander, $ per metric ton from lunar orbit to lunar surface; Other Lunar Systems, $ per metric ton of ore delivered to Mass Catcher; Materials Processing Plant, $ per metric ton of processed ore; Construction Station I, $ to completion of Construction Station II. Research and development and construction costs of the Satellite Solar Power Construction Facilities include all of the costs of research and development needed on satellite solar power itself (including ground facilities not expected to be produced directly by the Company), though some of this research and development is now being funded from other sources, but include none of the research and development costs associated with the products to be produced in the General Space Manufacturing Facilities. The full cost of research and development is included even though the Company intends to require the contractors performing research and development to bear part of such costs as a condition of the research and development contracts. The costs shown for the Satellite Solar Power Construction Facilities are for facilities capable of producing every four months one Satellite Solar Power Station, with a capacity of 5,000 megawatts at the busbars of the receiving stations on the ground, at at cost of $ each, including the cost of components transported from the earth's surface.

International and Government Partitipation

To the extent feasible, the Company intends to contract with the National Aeronautics and Space Administration, the European Space Agency and with similar government agencies for whatever services they can economically provide. Ground control, shuttle operation and space tug piloting would, for example, appear to be especially suitable for such contracting, and the Company would be willing to entertain any degree of government agency participation to the extent that such agencies submit the lowest bids for particular systems. The Company also intends to contract with government agencies for research and development work. Such participation will require changes in the laws of the United States and possibly in the laws of other countries. See "International Law and Federal and State Legislation."

The Company also intends to accept bids by non-United States corporations and to invest in the stock of such corporations in the same manner as it invests in United States corporations. Further, the fraction of the Company's capital invested in the stock of corporations of any one country or economic group of countries (such as the European Common Market) shall be substantially the same as the fraction of the Company's stock owned by citizens of such country or group of countries, provided that the governments of such countries are willing to underwrite the difference, if any, between a bid submitted by their corporation and a lower bid submitted by a United States corporation. Acceptance of bids by non-United States corporations or government agencies will also be conditioned upon a commitment by the government involved to purchase or permit the purchase of Satellite Solar Power Stations approximately equal in value to the system bid upon.

To the extent that countries are nevertheless underrepresented with respect to bids for contracts or subcontracts, qualified workers from such countries

Pome

it is hard to frown
when the gravity's
turned down.

—Peter Wyman
Annapolis County
Nova Scotia, Canada

Continued from p. 27

will be given preference for some of the jobs actually involving work in space directly for the Company.

The Company intends to sell or lease Satellite Solar Power Stations, manufacturing facilities and Space Habitats to non-United States entities to the extent permitted by law. See "International Law and Federal and State Legislation."

International Law and
Federal and State Legislation

The status of the Company's proposed space industrialization program under international law is not completely clear. The treaties to which the United States is a party and the United Nations General Assembly Resolutions bearing on the subject do not make the program illegal, but they do not directly address the important questions and could thus give rise to international dispute. Further, the United Nations Space Treaty provides that an individual or private firm cannot exploit outer space without the sponsorship of a government. The Company intends to seek United States sponsorship and clarification of the right of the Company to conduct its space industrialization program.

Substantial federal legislation will also be required to enable the Company to conduct its space industrialization program. The Company intends to lobby for legislation clearly establishing its right to do so and will not accept any bids for systems production and will continue to operate as an investment company until in its opinion it can, within the framework of such legislation, reasonably expect to earn a return on its investment commensurate with the risks involved. If at any time in the opinion of the Company the prospects of enactment of the necessary legislation no longer justify the expenditure of the Company's investment income on research and development, the Company will distribute its securities assets in kind to its shareholders, liquidate its other assets, dissolve itself and distribute the remainder of its assets to its shareholders. Such action would, under the Company's Certificate of Incorporation, require the approval of a majority of the Company's shareholders.

Though it is not essential to the economic realization of the Company's space industrialization program, the Company also intends to propose federal and state legislation enabling states to incorporate space habitats

No West to go but up

Certain rural reflections I wish to share on the subject of Space travel. My place is South of Cavendish, Vermont; green and wet in thrush-like silence. We are poverty, but not starvation (A paneless window boarded).

An old woodchuck leaned against his snath and said to me — while contemplating his herbs, "there ain't no work 'cause there ain't no war; only my scythe's not idle for weeds. Give us a war, and people'll live well around here. But with this peace years pass like so many tourists — a wave but not to stop."

And they did until one year money appeared like Spring grass — to be merely clipped at will for use. There were jobs at high pay and factories grinding and churning the midnight lights. Yet there were no ships of destruction to be made; nor did men make any spectacular wars upon themselves. It was Space and those outer places of nebulosity that stimulated our wealth. Parts we made to disappear amidst the stars, and the work paid very well.

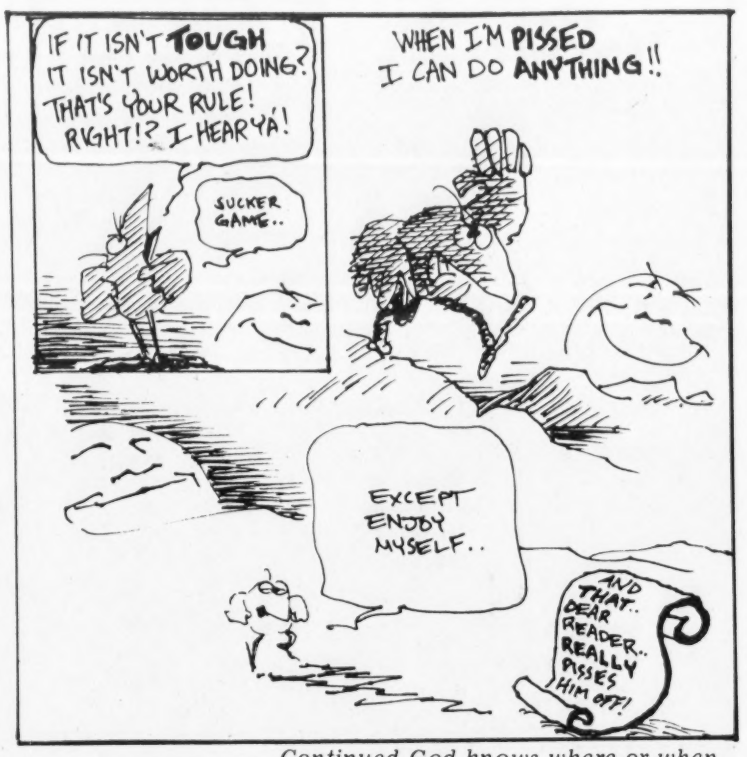
We pissed our wealth like so many pitchers of beer, as if in some technological display of space to spare. Out of the grind life was fast — too fast for them old hills, winding and curving to impede our ways. Work hung dreary, and Earth seemed wrinkled and thin.

People were going up we heard — like up and never come down. Ship after ship ascended — per week? Per month? I couldn't remember; we'd hardly see them from here anyway — though I seldom looked to see. They searched the moon for tin, the Plains of Mars for Zinc. There's molybdenum in the rings of Saturn?

Years passed and then the rush was off. Earth lay depleted. We wore a face weathered and thin — a dry Okie dust to kick. Life was up to a Venusian crew or the richness of asteroid fields. There was no West to go but up. How the skies sparkled their invitations. The third moon of Neptune has air they say. In the end I know I'd be the last to jump and leave my blind love of Earth to cry. There exist forests of my imagination that have to stay real — where I can touch trees and engage a piece of Space.

Thanks for the offer, but I guess I'll stay.

—Randolph Collyer
Cavendish, Vermont



and manufacturing facilities under their jurisdictions. This would permit space workers and their families to enjoy the various rights and responsibilities of state citizenship while living and working in space. It would also provide a stabilizing political effect on the emigration of what may eventually come to be substantial numbers of Americans to space. The Company intends to propose that foreign governments provide suitable legal frameworks for establishing habitats and manufacturing facilities within their jurisdictions to facilitate the sale by the Company of such structures to their citizens.

> [The following parts of the prospectus are more or less standard and are not included in this paper: Investment Restrictions, Management, Net Asset Value, Federal Tax Information, Capitalization, Noncumulative Voting, Underwriting, General Information, Legal Opinions, Experts, Balance Sheet, Accountants' Report.]

SPACE COMMUNITY PLANNING

Whether space industrialization is to be publically or privately financed is a pivotal question which must be answered before we can progress far in space community planning. The amount of resources to be allocated to the amenities of life and the freedom and diversity to be permitted in space communities will obviously be affected in a most fundamental way by the answer. A corollary question of some importance is to what extent the private financing of a space community would be supplied by its inhabitants rather than their employer.

If space industrialization is privately financed, it is quite likely that many of the space workers will be investors and will be rich enough to afford much more space in a space habitat than is generally contemplated. Once the staging company converts to an operating company, some of its financing strain may be eased by paying employees in part with stock or stock options. This may be especially appealing to the workers living in space, who would have little immediate need for cash anyway. Assuming space industrialization proves to be a profitable investment, they would then have a great deal of money to invest in their homes in space. It should be noted that workers who do not put extra money into the space habitat will be benefited by those who do. It is pleasant to live next to a forest or ranch even if it belongs to someone else.

For tax purposes it might be advantageous for the space workers to form their own cooperative housing corporation and contribute their labor toward building the space habitat and the buildings in it. Assuming the average worker is in a 50% tax bracket, they could then get twice as much habitat for a given amount of work.

Even more significant than the diversity of living space will be the freedom possible within a cooperatively owned space habitat to choose diverse life styles. If half of all Americans will be living in space habitats by the end of the next century, it may also become important to the long range preservation of our free society.

The meek shall inherit

Freeman Dyson: The basic difference between you and me is that you live in a closed universe while I live in an open one. You have a feeling of the world as a rounded whole, in which energy should not be disproportionately abundant. I look upon energy abundance as a liberating force, enabling us to seize unexpected opportunities. Perhaps each of us will in the end be proved right in his own domain. The meek shall inherit the Earth, as Jesus said, and the spendthrifts shall inherit the rest of the solar system.

Amory Lovins: You can have the rest of the solar system.

Continued God knows where or when. O'Neill has a book contract and advance.

STAGING COMPANY FINANCING

We are all waiting for space industrialization to be an idea whose time has come. If we are looking to the government of the United States to finance and organize it, that time will be when something in the neighborhood of 50 million American voters feel the government should invest their tax money in it. It would not seem unreasonable to assume that before 50 million voters could be so convinced, one million investors could be, especially if the risk is reduced by means of a staging company.

Only one million investors willing to invest $1,000 each in a staging company would yield $50 million per year to spend on research and development. It would also yield $1 billion in assets to make the Company's space industrialization intentions credible. The combination should give enough momentum to the market mechanism described in the Preliminary Prospectus to raise the additional capital needed for conversion to an operating company. Convincing one million investors is no small task, but it need not be done in one financing, and it should be within reach of the staging company described in the Preliminary Prospectus with $45 million in assets and $2.5 million per year in income. Success should in the last analysis depend upon the quality of the research and development funded and the ability of the staging company to use it to reduce the cost estimates shown in the table under "Solicitation of Estimates and Bids."

The final and most important question, how to sell the first $45 million of staging company stock, comes too close to promotion of an actual company to be properly within the scope of this paper. It may be noted, however, that it is not beyond the realm of realistic hope. It requires a relatively small step for mankind. ■

Rocket exhaust from this Apollo 11 booster is mostly water (from combustion of hydrogen and oxygen), which seems innocuous. But in the upper atmosphere, which is quite dry, water vapor sets up a positive feedback increasing the greenhouse effect and warming the atmosphere. Water vapor from the 1973 launch of Skylab caused a 1,200 mile "hole" in the radio reflectivity of the ionosphere which lasted for several hours. The solid fuel rockets of the Space Shuttle will release 250 tons of HCl into the atmosphere on each flight, which may affect the ozone shielding of Earth.

Astropollution

by David Thompson

AMERICANS HAVE A DEEP YEARNING for the frontier which vanished recently from North America. We long for its freedom, abundance, and adventure, but we have forgotten our mistakes. As we tamed the wilderness, vast herds of bison dwindled to a few hundred. Only 35 years after the opening of the Oklahoma territory for homesteading in 1889, misuse of the land precipitated dust-bowl conditions and economic collapse. As we exploit the new frontier of space, are we destined to repeat these mistakes on a cosmic scale?

Development of the space frontier is proceeding rapidly. Man set foot on the Moon barely 12 years after the start of the space age, and spacecraft have relayed photos from the surfaces of Mars and Venus. Helios penetrates inside the orbit of Mercury, and Pioneer 10 will pass the orbit of Pluto in 1987. Heppenheimer and Hopkins predict that if we start building satellite solar power stations now, the first can be completed by 1989 and the first space colony can be completed by 1998.[1] Yet even as plans for economic development of space gather momentum, no comprehensive plan for conservation of the resources in outer space has been proposed. Clearly, then, the groundwork for conservation of resources of the solar system, including space and celestial bodies, must be laid *now*, before exploitation begins and vested economic interests develop. All too often, conservationists find themselves in the shortsighted position of trying to save the last few trees of a magnificent forest from the saw. Overzealous pursuit of an economic frontier in space will undermine the development of zero-growth philosophies and economies on Earth, spark new demands for Earth's resources, and create additional sources of environmental pollution.

Advocates of space colonies have eagerly promoted their views with a number of simplistic and erroneous notions, some of which are listed below in their most extreme form:

1) The solar system is so vast and limitless that pollution or depletion of its resources are impossible.

2) Emigration from the earth to space colonies or to other planets can help to alleviate Earth's population crisis.[2]

3) Industry in space will have no detrimental impacts on Earth or on the biosphere.[3]

4) There is no need for conservation of remote regions since virtually no one would be affected.

5) Since conservation concepts apply only to living resources, there is no need for conservation of the "dead" environments of space and celestial bodies.[4]

6) Space colonists will make such extensive use of recycling that they will produce almost no pollution.

In short, space industrialists are telling us that we have little need to take the environment into account as we develop the frontier of space. Similar myths played a prominent role in the mismanagement of

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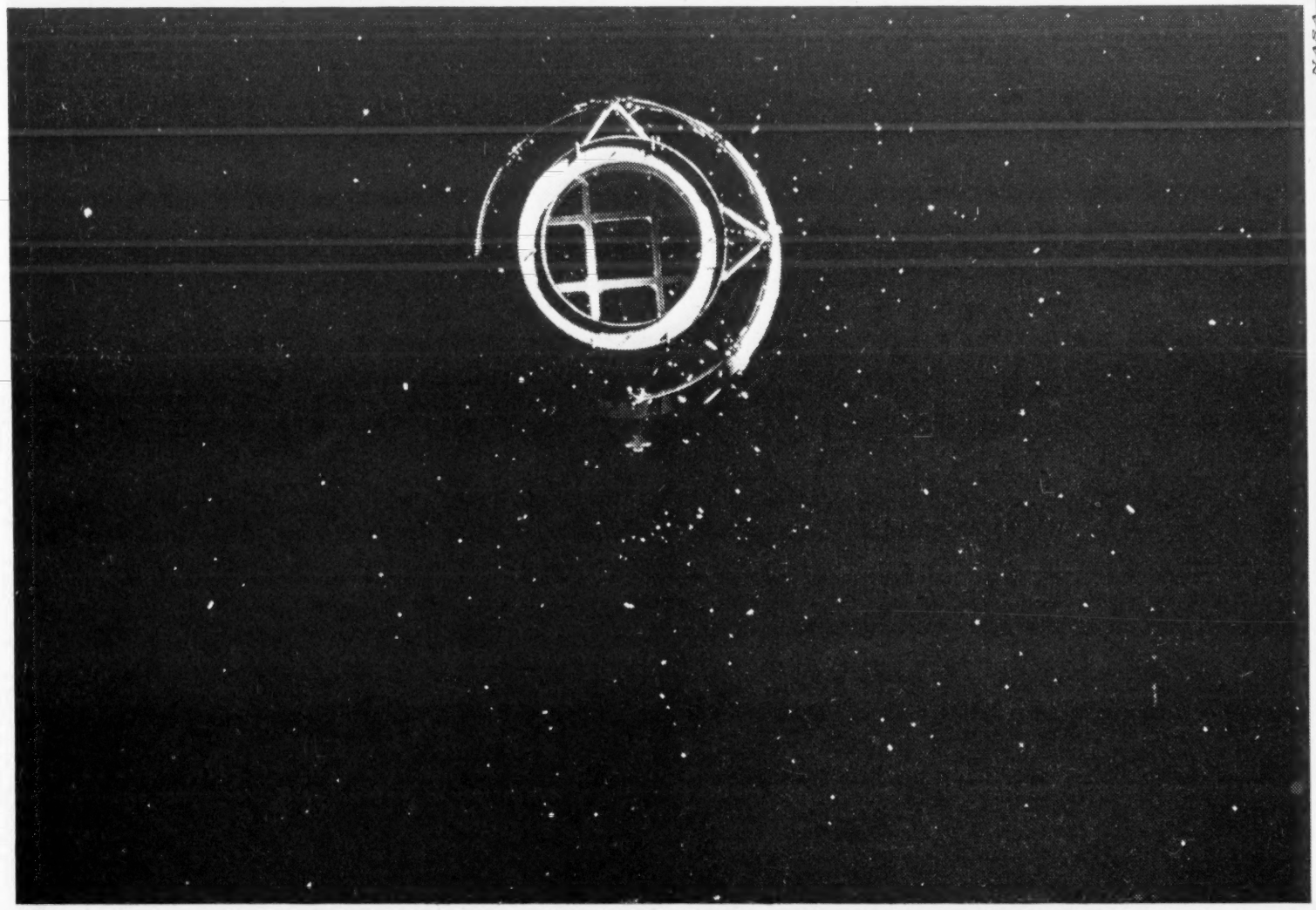
Why has no one done this before? – catalog in one place all the beginning and potential offenses to the environment of our increasing Space activities. Why did it take a biology teacher in Wisconsin to do it for the first time?

David Thompson is 35, a graduate (shortly after I was) of the Stanford Biology Department. He's an enthusiast of colonial birds, especially penguins – spent three summers in Antarctica with them – and a teacher in the University of Wisconsin Center System. He got interested in Space by a talk that Keith Hanson of the L-5 Society gave there. "He said such preposterous things that it got me really mad."

Is Thompson against Space Colonies? "Whether you're for or against Space Colonies, they really get into your blood! I'm not against them, I just don't want to see them perpetuate the old mistakes. In all these schemes the materialistic angle of life is stressed quite a lot. It's just consumerism transposed into outer Space. Philosophically the whole concept is kind of empty. It smacks of escapism."

Dr. Thompson is now enough interested in "astroecology" that he would like to pursue the subject professionally. Judging by this article – exhaustively researched, impassioned but undogmatic – he has the qualifications.

–SB



The "induced environment" – swarms of tiny particles follow the Saturn V third stage which has just separated from Apollo 8. Sunlight on the particles causes the "firefly phenomenon" first reported by John Glenn.

our Western frontier, and in the present-day contamination of our oceans. In the following pages I will discuss each of these erroneous concepts and attempt to show why they are "myths."

Contamination of The Void

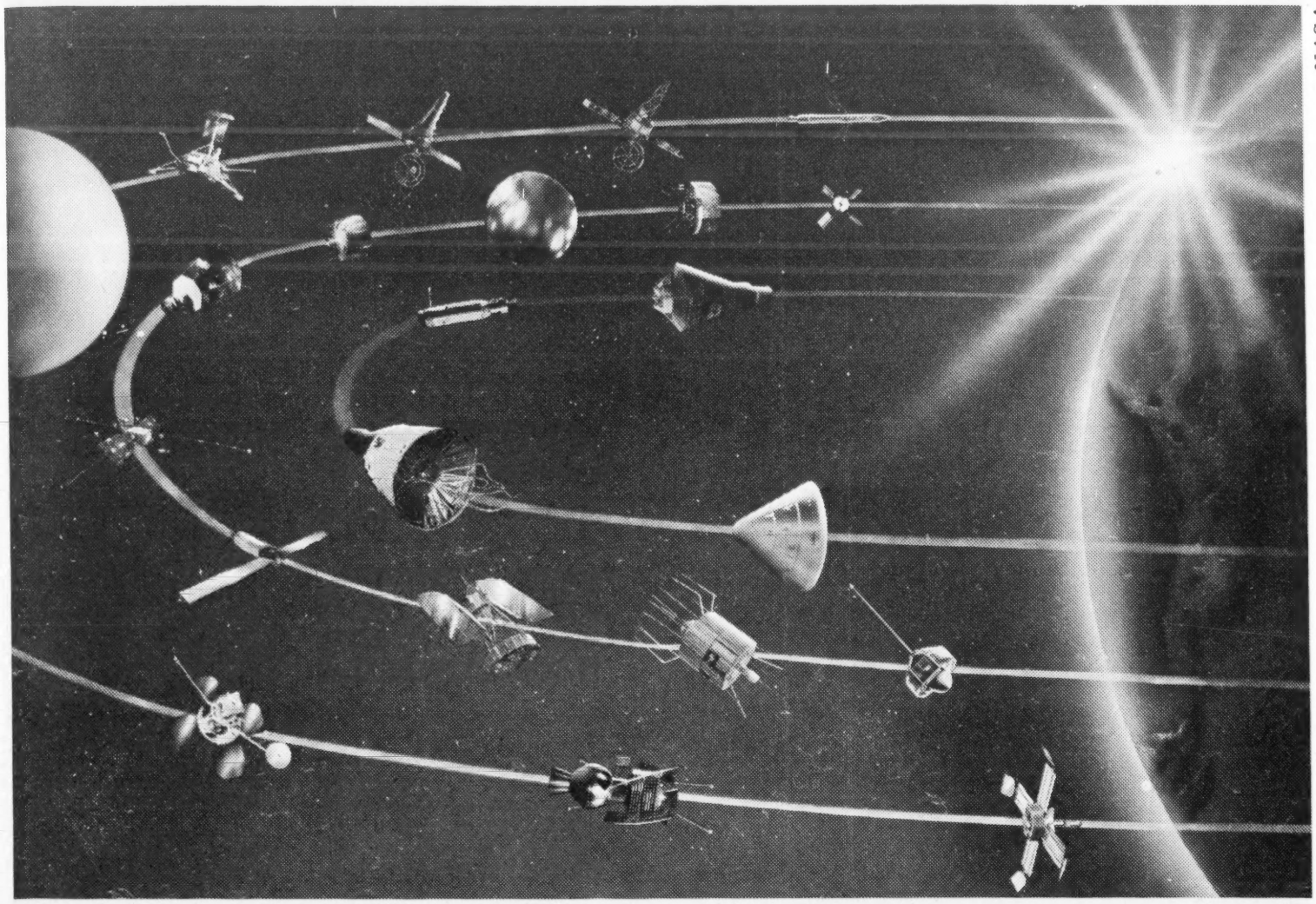
BEFORE 1970 THE EARTH'S OCEANS were thought to be a vast and limitless sink for man's wastes. Then, as floating globs of tar and plastics were routinely found far out at sea, our mistake was recognized. Although the oceans contain an awesome 1,430,000,000,000,000,000 tons of water, slow mixing and biological concentration exaggerate the problem.[5]

Yet the myth lives on, now with outer space as a limitless sink for contaminants. Unfortunately, we have no reason to believe that in space the laws of nature which make pollution a problem on Earth will be suspended. In fact the opposite may be true. The void of space is valuable because it is so *empty* – permitting frictionless movement at high velocities, unobstructed passage of all sorts of radiations for communication, energy production, and probing the universe. Small particles of junk can cloud optical telescopes or interfere with radio telescopes, and larger ones interfere with freedom of movement by posing the threat of collision. Although the void is far more vast than our oceans, mixing may be more severely limited. For example, particles of waste larger than microscopic size will remain for a long time in the orbits where they originated.

Ever since John Glenn Jr.'s historic flight, astronauts have noticed swarms of mysterious particles surrounding the spacecraft: the "firefly phenomenon." Particles can consist of flaked paint, liquid waste dumps, frost particles collected on cold surfaces during passage through the atmosphere, lost or discarded articles, or unexpected leaks of materials such as hydraulic fluid. The clearing time of these particles was substantially longer than anticipated.[6]

This kind of contamination of space in the vicinity of a spacecraft is called its "induced environment." The particles can degrade the performance of a spacecraft, as dramatically illustrated during the third encounter of Mariner 10 with the planet Mercury. Correct orientation of the spacecraft was needed to insure that its antenna pointed toward Earth. Orientation is sensed with the aid of a star tracker, but three days before the encounter, a distracting particle drifted by and was mistaken for Canopus, the brightest star in the sky which is used as an orientation "landmark." This error caused a break in communications with Earth, but fortunately the problem was corrected in time to send data acquired during the flyby of Mercury. Nevertheless, precious propellants were wasted in the process of correcting the error.[7]

Similarly, an atmosphere may be temporarily induced around a celestial body which is too small to retain a permanent atmosphere. During the Apollo program, a high molecular flux induced by the spacecraft was detected in lunar orbit.[8] If the Moon ever supports



NASA

There are at present over 4,000 human-launched objects in Earth orbit. This 1968 NASA graphic illustrates the variety of satellites of the first years in Space.

a sizeable population or regular spacecraft traffic, the "induced atmosphere" might become dense enough to interfere with some uses of the Moon, such as its use as a base for astronomical observations.[9]

The void of space might also become cluttered with more widely broadcast particles or objects which could pose a hazard to navigation or interfere with communication or radio astronomy. For "Project West Ford," the United States planned to orbit 350 million small copper "hairs" for reflecting military radio communications. The International Astronomical Union opposed the project because they feared that radio noise originating on Earth would be reflected back to radio telescopes, interfering with their observations. The launching occurred in 1961 but fortunately, the experiment failed.[10] Explosions in space might also result in widespread broadcast of bits and pieces; several Russian spacecraft have exploded. Gerard O'Neill has proposed moving satellite solar power stations and asteroids from orbit to orbit by means of a "mass driver" which would repeatedly eject chunks of matter.[11]

Each one of these chunks would become another piece of space junk. Finally, the very proliferation of artificial satellites in orbit may eventually create hazards of collision.

By March 12, 1978, there were 4,078 objects in Earth orbit, including 547 payloads and 3,531 trackable pieces of debris. In deep space floated another 56 space probe payloads and 50 pieces of debris.[12]

Of particular concern is the crowding of communications satellites in geosynchronous orbit at certain desireable locations above the equator. There may be 40 international satellites in these locations by 1985.[13]

The radiations of space are also subject to contamination or augmentation through man's activities. In 1958 the U.S. conducted a series of high-altitude nuclear tests called Project Argus, which was opposed by some scientists.[14] Then, in 1962, the U.S. exploded a 1.4 megaton nuclear device 250 miles above the Pacific Ocean. The intensity of the Earth's natural radiation belts was increased significantly and the core of the belt, about 2,000 miles high, was expected to last for many years. The increased numbers of energetic particles trapped in the belt could pose serious dangers to astronauts, cause a breakdown in Earth's radio communications over wide areas, and possibly even affect weather. The radiation did cause severe damage to the solar cells of several satellites.[15]

Other activities which could result in radioactive contamination are disposal of radioactive wastes in space (which is being seriously considered[16]), use of nuclear rockets, and use in spacecraft of nuclear electric generating systems. Kraft Ehricke has proposed underground nuclear explosions for processing resources on the moon,[17] and the explosion of nuclear devices to vaporize the icecap of Mars has also been proposed.[18] *[more →]*

A cause for continuing concern, both on Earth and in space, is the crowding of the radio frequency spectrum used for communications.[19] Present satellites have mechanisms for turning off their transmitters when they have outlived their usefulness, but some of the early satellites may continue to usurp portions of the spectrum for thousands of years.[20]

Contamination of Celestial Bodies

THE DANGER OF CONTAMINATION of other planets with microorganisms from Earth was recognized as early as 1958 at the U.N. The Space Treaty of 1967 states that signatory states shall:

> Pursue studies of outer space, including the moon and other celestial bodies, and conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of the earth resulting from the introduction of extraterrestrial matter. . . .[21]

Contamination of other planets and moons must be avoided until we are sure no indigenous lifeforms exist; otherwise, we might lose a unique opportunity to determine whether life has evolved elsewhere beyond the Earth. Unwitting contamination of Mars with microbes from Earth, or vice versa, could have disastrous consequences for the contaminated ecosystem.

The most obvious way by which celestial bodies could become contaminated is with hitchhiking microorganisms brought by unsterilized spacecraft from Earth. The Committee on Space Research (COSPAR) of the International Council of Scientific Unions has set rigorous standards for sterilization of spacecraft landing on Mars in order to keep the probability of accidental contamination very low. We know that microorganisms can survive in space and on the surface of Mars or the Moon. One viable microorganism, which hitchhiked to the Moon inside the camera of Surveyor 3, survived 950 days in the hostile lunar environment and was found when Apollo astronauts returned the camera to Earth.[22] Microorganisms can certainly reproduce under the relatively mild conditions found on Mars. Sagan, Levinthal, and Lederberg estimated that if a microbe accidentally delivered to Mars reproduced only once a month, and that its descendants continued to do so with no other ecological constraints, in less than 10 years the populations of micro-organisms in the soil of Mars would be comparable to populations on Earth.[23] In fact, contamination of Mars may have already occurred, since an unsterilized Russian Mars probe malfunctioned while on a collision or near-collision course with the planet, and it may have crashed there.

If life is found on other planets or moons, it will probably occur in favorable "oases" which will be more susceptible to contamination, more suitable for habitation by man, or which may contain volatile substances for the supply of bases. If they possess a chemistry similar to that of Earth's life, extraterrestrial organisms may become food for astronauts. Consequently we must set aside specially protected preserves as soon as they are identified. These might include active volcanic regions where volatile gases may have accumulated, recent impact craters, segments of polar ice caps, sinuous channels, or low-lying regions where higher atmospheric pressures prevail.

Even if life does not exist on other celestial bodies, prebiological evolution of complex molecules may have occurred. Amino acids have been found in meteorites and moon dust,[24] and extremely complex soil chemistry, unlike anything on Earth, may account for the puzzling results of the Viking biology experiments. We cannot investigate prebiological evolution on Earth because, if any quantity of organic compounds are synthesized abiologically on Earth, they will rapidly be metabolized by living organisms, or mistaken for the products of living organisms. Hence, prebiological or chemical evolution which may exist on the other celestial bodies can be thought of as a kind of biological resource useful for scientific study. Any contamination of planetary surfaces with organic rocket exhausts, organic garbage, or even dead microorganisms could jeopardize research on prebiological evolution. If living organisms were introduced, they might rapidly metabolize, destroy, or contaminate these native compounds. Manned landings on celestial bodies should be prohibited until we are sure that no indigenous lifeforms exist, and until studies of prebiological evolution have been completed.

The value of celestial bodies to science or tourism may be decreased through disturbance of their surfaces. Footprints, strip mines, and discarded equipment on the moon's surface will remain for eons, eventually destroyed through processes measured in millions of years, although we are still largely ignorant of the mechanisms involved. Certainly biological decomposition, wind erosion, and water erosion will not assist the healing process. On an airless body with a weak gravitational field like the Moon, particles arc out on long ballistic trajectories from disturbances like footsteps, vehicle wheels, spacecraft impacts, explosions, and rocket blasts. Of course disturbances will tend to be restricted to the vicinity of lunar bases, but this is precisely where the scientists will have to study the records preserved on an undisturbed surface.

The list of disturbances to the Moon's surface is growing. There have been six manned landings which extended activities up to several miles from the landing site via the lunar rover vehicle. Each of these manned expeditions left behind equipment and the descent stage, five left behind ALSEP experiments, and three allowed the upper stage of the Saturn booster to impact on the Moon. All told, 42 payloads and boosters have impacted on the Moon between 1964 and 1976. Mars and Venus boast five known impacts each.[25]

Limits of the Solar System

ADVOCATES OF SPACE COLONIES often imply that there are no limits to the space or resources of the solar system. Exponential growth has an insidious way of generating astronomical numbers in a short period of time. According to plans published by O'Neill and others, the space cities are to multiply like giant bacteria every two years, giving rise to exponential growth.[26] Will

NASA

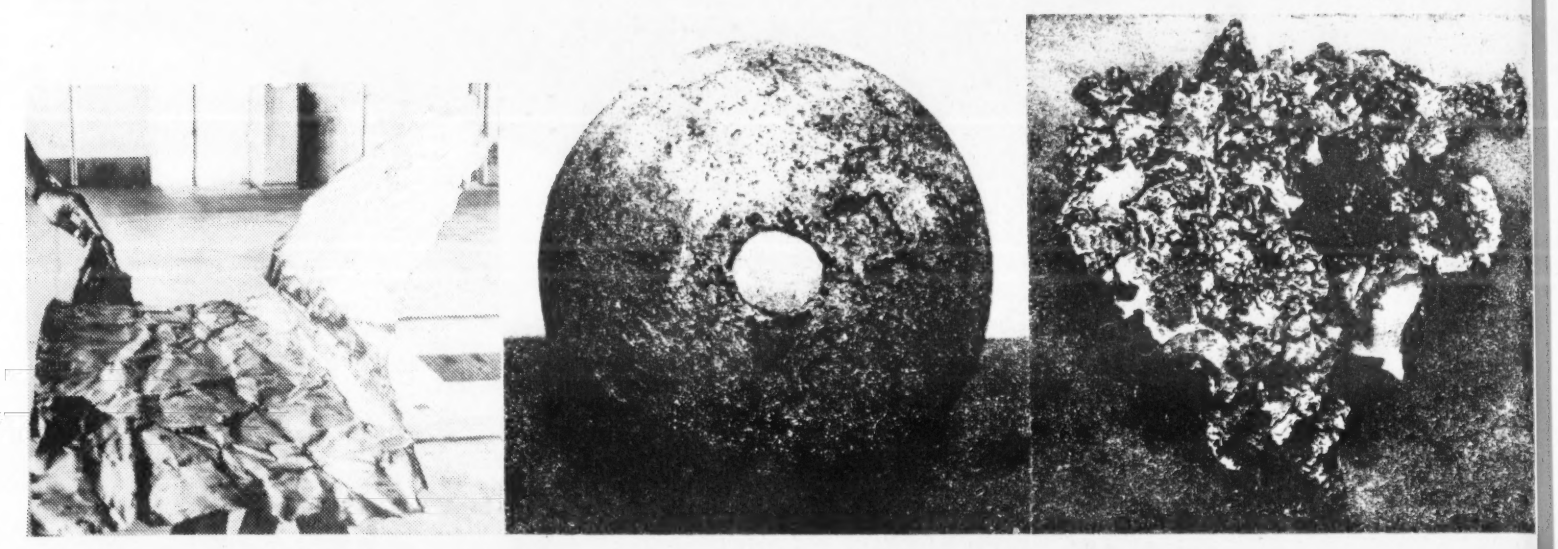
Debris left on the lunar surface by Apollo 17 – mostly from ALSEP (Apollo Lunar Satellite Experiment Package). The photograph was taken in December, 1972. Little is likely to change for millions of years or until there's further impact by humans. By the way, we are grateful to Les Gaver at NASA Headquarters for helping us locate these photographs and for free provision of prints.

growth stop when the cities pay off their Earth-bound investors?

O'Neill has estimated that the first limit for space colonies will be reached when they run out of asteroidal material about 500 years from now, after a 20,000-fold population increase. (In 1992, it will be 500 years since Columbus discovered the "New World," not really very long ago.) This prediction assumes that there are no critical materials in short supply to limit growth sooner, and that the present population growth rate of about two percent per year will continue.[27]

The ultimate limits to human expansion are wildly speculative, but inevitably exist. For a stable population, either energy or matter could be limiting factors. According to Freeman Dyson, a civilization would be limited by the energy output of its star (4×10^{23} kilowatts for our Sun), with colonies arranged in a spherical distribution about the Sun, intercepting nearly all of its light.[28] The limits of availability in the Solar system of constituents of human protoplasm – hydrogen, oxygen, carbon, phosphorus, nitrogen and other elements – would also be eventually reached, as well as the availability of materials for construction of colonies.

If human population continues to grow, then the frontier must continually push out into space at an ever increasing velocity (assuming constant popula-



Man-made meteorites. The 4-pound piece of skin from Friendship 7's booster landed in Cape Province, Union of South Africa. (The NASA caption for this photo says, "Once a booster has achieved orbit, it is extremely difficult to predict precisely where and when it will re-enter the atmosphere. So chances are equal that re-entry will occur at any point along the flight path including over the United States. The Mercury-Atlas orbiting path is 75% over water and therefore will most likely re-enter over water.") Next is a 20-pound hollow sphere, probably Soviet, found near Winter Haven, Florida. The charred aluminum fragment was picked up near Marietta, Ohio. (The last two photos are from Parade, *July 18, 1976 – sent by Joe Eddy Brown.)*

tion density). Eventually growth would be limited by the speed of light.[29]

Impossibility of Emigration

SOMETIMES COLONIES IN SPACE are promoted in part for the alleged opportunities they offer to absorb surplus population from Earth. But an elementary analysis reveals the impossible economics of large-scale emigration from Earth. The Earth's population presently increases by about 70 million persons each year. Let us assume that enough space shuttles (each carrying 100 passengers) and enough space colonies can be built, and that social problems associated with uprooting large numbers of people to a new, strange environment are not severe. Approximately 2,000 space shuttle launches per day would be required just to transport people into low Earth orbit. Assuming an optimistic cost of $20 million per shuttle flight,[30] then the cost *per day* would be $40 billion. By the time the capability for transporting and housing these emigrants is achieved, several decades from now, the Earth's yearly population increase will almost certainly be higher.

Environmental Impacts on Earth

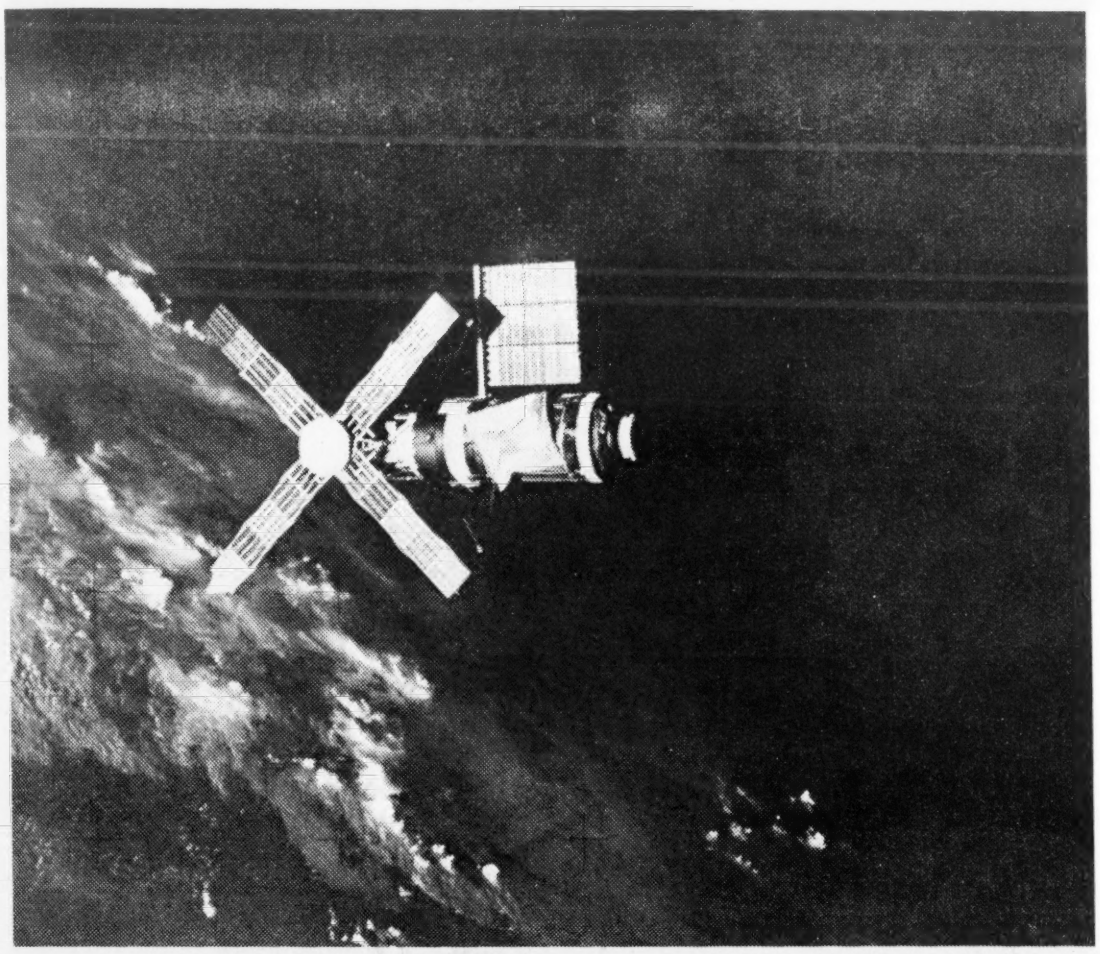
ADVOCATES OF DEVELOPMENT in space extoll the benefits for Earth, ignoring possible harmful impacts. It is natural to believe, because of the difficulty of getting into space, that events there are too isolated to affect us, but this view is a myth.

There is an increasing amount of evidence from a variety of disciplines linking important events on Earth to celestial happenings. Ice ages may be caused by variations in the Earth's orbit. Extinctions of species may have resulted from increases in cosmic radiation from space, and sunspots may have important effects on weather. Hoyle and Wickramasinghe have proposed that epidemic disease comes from outer space.[31]

Ecologists have studied the quantities, transport, cycling, and ultimate sinks for pollutants on Earth. This kind of analysis should be extended to the solar system with Earth as one component. The ultimate fate of pollutants in space will be influenced by their particle size, physical state (liquid, solid, or gas), chemical stability, activity of the sun, and orbital parameters. For example, the solar wind sweeps gases outward from Earth's orbit, but toxic pollutants in space might adsorb onto dust headed for rendezvous with Earth. In contrast, the Poynting-Robertson Effect draws tiny solid particles in toward the Sun.[32] No doubt other kinds of transport remain to be discovered by "Astroecologists."

The Earth is at the bottom of the deepest gravitational "well" in the inner solar system (excepting the Sun), attracting a mass of extraterrestrial dust and larger meteroids amounting to from 10 to 100 metric tons a day.[33] Little is known about the long-term stabilities of objects in orbit around the Earth. Many objects in low-Earth orbit are expected to fall into the atmosphere within 10-12 thousand years, and even objects accelerated beyond escape velocity from the Earth, which go into orbit around the Sun, may re-encounter Earth within a million years.[34] Probably most solid wastes in Earth orbit will eventually plunge into the atmosphere, most often finding their way into the oceans.

Difficulties have already arisen from the decay of orbits of artificial satellites and rocket boosters. By 12 March, 1978, 1,223 Earth satellite payloads and 4,920 other pieces of debris had fallen back to Earth.[35] The variability of the Earth's upper atmosphere makes it impossible to predict precisely when and where these objects will fall. Most of the objects contaminate our atmosphere as they burn up on reentry, but



The 85-ton Skylab may fall back to Earth before the first Space Shuttle flights can get to it to boost it into higher orbit. Its orbit was not expected to decay so rapidly, but unusually strong sunspot activity in recent years heated the upper atmosphere sufficiently to slow it down ahead of NASA's schedule, to NASA's embarrassment.

more massive components of some satellites have reached the Earth. The danger that satellite or rocket debris might cause bodily harm or property damage is small but does exist. In fact, pieces of a U.S. booster rocket fell on Cuba in 1961, killing a cow and spurring diplomatic protests from Cuba.[36] In 1969 fragments of an American Saturn V booster rained on the deck of a German ship in the Atlantic. In 1970 debris from the Soviet Cosmos 316 fell across Kansas, Texas, and Oklahoma. And this January, 1978, a 21-foot piece of an American satellite crashed in Mexico.[37]

> A major concern to NASA officials is the eventual re-entry of Skylab into Earth's atmosphere. The satellite is so large and consists of such bulky pieces that much of it is bound to reach Earth. These falling objects – such as film vaults, tanks, 1000 pound gyroscope wheels, the telescope mount and other items – could cause widespread damage, injury, or even death if they hit Earth in a populated region.[38]

NASA is presently considering using one of the first space shuttle flights to either boost the 85-ton Skylab to a higher orbit or to control its reentry.[39]

The recent impact of Cosmos 954 in northern Canada demonstrates the special hazards of spacecraft with radioactive powerplants. The disintegrating satellite deposited radioactive fragments at three separate locations and may have released a cloud of radiation 200 miles long at an altitude of 30-40 miles. Although the reactor core containing 110 pounds of enriched U^{235} was designed to prevent explosion as a nuclear bomb, release of its material adds to the worldwide burden of radioactive isotopes, and contamination at ground level could have been catastrophic. If the satellite had remained in space for one more orbit, it would have fallen near New York City.

Use of nuclear power plants in space is now routine in applications where substantial power is needed or where sunlight is weak or interrupted. There are two basic types of power plants – the more hazardous nuclear reactors like that of Cosmos 954 fueled with enriched U^{235}, and the smaller radioisotope thermo-electric generators (RTSs) fueled with Pu^{238}. The U.S. is known to have orbited only one reactor, the SNAP 10A, sent aloft in 1965.[40] The Russians, in contrast, still have 11 reactors similar to Cosmos 954 in orbit.[41]

The U.S. has launched many RTG units since 1961. One or more units are used in the many Transit navigational satellites, Nimbus III, Pioneer 10, the five ALSEP packages on the moon, two Viking Landers, Mariner (Jupiter-Saturn), and the LES 8/9 communications satellite.[42]

So far, at least six nuclear satellites, in addition to Cosmos 954, have been involved in accidents. A predecessor of Cosmos 954 reentered the atmosphere in 1973 over the north Pacific Ocean, while two different Russian payloads bound for the Moon fell back to Earth, releasing some detectable high-altitude radiation. The U.S. score stands at one Transit satellite decayed over Madagascar in 1964, the crash of the Apollo 13 lunar module near Australia, and the aborted launch of a meteorological satellite from California.[43] In this last accident, the RTG was recovered intact.

The Transit RTG units are protected to survive reentry and crashes, and are placed in moderately high orbits which should last from 130-375 years.[44] Nevertheless, these protective measures are not 100 percent failsafe, and radiation can be released if the fallen capsule is not found within one week after descent. Apparently, Cosmos 954 was placed in a dangerously low orbit since it was a surveillance satellite. It was fitted with a rocket designed to kick the reactor into a higher orbit when no longer needed, but this safety system failed. The one U.S. reactor was placed in a 700-mile-high circular orbit which should last for 4,000 years, but the reactor itself failed mysteriously after 43 days of operation in space. *[more →]*

O'Neill's plan for the colonization of space calls for transmission of energy from satellite solar power stations to Earth via microwave beams. Little is known about the effects of these microwaves on life or on the atmosphere, although the biological effects are currently under study by NASA. A recently declassified U.S. summary of microwave research in Eurasian Communist countries stated that persons exposed to low-level microwave radiation "experience more neurological, cardiovascular and hemodynamic (blood circulation) disturbances than do their unexposed counterparts."[45] Overexposure to microwaves "can cause headaches, dizziness, fatigue, irritability, insomnia, agitation, depression, anxiety, forgetfulness and menstrual disorders."[46] The Eurasian Communist countries have done more research on the biological effects of microwaves and have set exposure standards for the protection of workers which are "much more stringent than those of the West."[47]

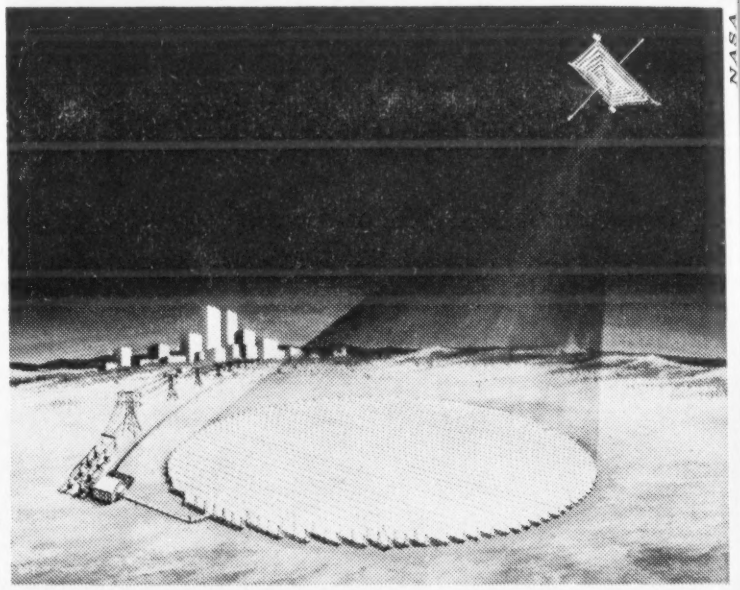
At the present time, too little is known about the non-thermal and long-term effects of microwaves to state with any assurance that microwaves beamed from space would not exceed safe levels of exposure for humans. Even if people can be excluded from the receiving antenna area, wildlife cannot be excluded. A recent study found that migrating birds flying over the antenna of Project Sanguine/Seafarer responded to its electromagnetic field by turning and changing altitude.[48] There is increasing evidence that birds use the Earth's magnetic field to aid in orientation, and possibly the sense organs involved could be confused or damaged by microwaves.

It is hard to believe that the huge amounts of energy beamed from space would not have significant effects on the atmosphere. Recently Frank Drake of Cornell reported an experiment conducted at the Arecibo radio telescope in Puerto Rico in which experimenters beamed microwave energy *up* through the atmosphere in a manner similar to what solar power satellites would beam down. The first reports said that the experiment caused disruption of the radio reflectivity of the ionosphere, making it more reflective in such a way that everybody's CB radio might jam everybody else's.[49]

That preliminary report turned out to be incorrect — a technical error in collecting the data. In fact the finding was that the experiment caused no disruption of the ionosphere. However, the experiment was done with microwave beams only one-tenth the power of what would be coming down from solar power satellites. Until full-power experiments are made, we still don't know what the atmospheric effects might be.

And what of the environmental impacts of the receiving antennas measuring 4.6 miles in diameter, or of the electric transmission lines?

Traffic of spacecraft through the atmosphere is a potential source of atmospheric pollution. Three important components of rocket exhaust from the space shuttle are HCl from the solid propellant rockets, NO_x formed from O_2 and N_2 entrained



Plans for the colonization of Space call for transmission of energy from Satellite Solar Power Stations to Earth via microwave beams, but little is known (and much is suspected) about the effects of such beams.

in the flame of the rockets, and H_2O from the main engine. Each shuttle launch will deposit 503,000 pounds of HCl in the atmosphere, and 50-60 flights per year are anticipated.[50] Both the chlorine (from HCl) and NO_x are thought to diminsh the ozone shield which protects all life on Earth from damaging ultraviolet radiation. Preliminary NASA studies have concluded that harm to the ozone shield from NO_x will be insignificant, and that shuttle flights will cause an 0.4% reduction in the ozone concentration after 20 years.[51] But these tentative conclusions of minimal harm are based on 50-60 flights a year and the question will have to be reexamined if the frequency of flights is increased. This small number of flights probably could not support a full-fledged colonization of space following O'Neill's concept. Moreover, additional damage to the ozone shield from the recently-announced Russian space shuttle has not been taken into account.

Taken at face value, the water which constitutes the bulk of the exhaust from the shuttle's main engines seems innocuous. Advocates of space colonization boast that the exhaust is "cleaner than city air." Anyone caught in a rainstorm knows that water is a normal constituent of the lower atmosphere. But as altitude increases, decreasing temperature squeezes moisture from the air so that the upper atmosphere is quite dry. According to a recent study, a large greenhouse effect results from doubling the stratospheric water vapor.[52] This reinforces the greenhouse effects of other trace gasses including CO_2, and positive feedback could occur since as the atmosphere is warmed by the greenhouse effect, it has a greater capacity for water.

Another and unexpected effect of water vapor on the ionosphere was observed in 1973, when Skylab was boosted into orbit. The exhaust, containing 70 percent water vapor and 30 percent molecular hydrogen, flooded into the thin air above 110 miles at a rate of one ton per second. Three radio observatories observed a "hole" 1,200 miles in diameter appear in the ionosphere as the rapidly expanding exhaust gases

temporarily upset chemical balances, taking up 70 percent of the free electrons of the ionosphere. Within one and a half hours, this "hole" began returning to normal.[53]

The environmental impacts already discussed are "primary impacts" because they result from the effects of hardware in space or in the atmosphere. But there are also "secondary impacts" from launch complexes, runways, test facilities, rocket factories, antennas, and even mundane office buildings. All these produce effluents, consume energy, and use resources. The predicted cost of from $30 billion to $200 billion for the first space colony provides an indication of scale for these activities. "Tertiary impacts" would result from the consumption on Earth of energy produced in satellite solar power stations. Finally, "quaternary impacts" are the effects on human population. Animal populations typically increase until they reach the "carrying capacity" of their environment, which is determined by the abundance of various critical or limiting resources. A series of technical advances, starting with the domestication of plants for agriculture, has continually raised Earth's carrying capacity for humans, and consequently our population has expanded. If we make "limitless" solar energy available from space before we have learned to control population, it may only stimulate another round of population growth.

There are of course benefits to the environment which could result from future space programs, but these are outside the scope of this discussion. Satellites monitor Earth's resources and pollution, while communications satellites eliminate the need for transmission lines and relay towers.

Environmental Problems in Antarctica

THE FOLLOWING SUMMARY of conservation problems of Antarctica demonstrates that remote and sparsely populated regions can indeed have severe environmental problems.

The formidable barriers of ocean, storm, and ice did not prevent early exploitation of Antarctica's biological resources – the enormous populations of whales, seals, seabirds, and other organisms supported by the upwelling of nutrient-rich bottom waters. By 1795 sealers, mostly American, began to hunt the southern fur seal on the beaches of the outlying islands, slaughtering millions for their fur.[54] By 1820 most concentrations of seals had been found and their populations had been decimated. By the 1870s populations had recovered somewhat, and again the southern fur seal, along with the southern elephant seal, was hunted almost to the brink of extinction. The increasing scarcity of whales in the northern oceans also brought seagoing entrepreneurs to Antarctic waters, in spite of the awful conditions mariners had to endure there. At first the southern right whale was sought because it was easy to hunt with the hand-hurled harpoons and rowboats of the time, but soon it too became scarce. As whaling technology improved the whalers turned to the larger and faster blue whale, and now there are perhaps only 2,000 of these magnificent creatures left alive. By the 1960s, the stocks of whales in the southern oceans were down to ten percent of their original numbers. The lesson is clear: even extreme isolation and severe conditions did not prevent the rapid exploitation, and then overuse, of the richest Antarctic resources by unregulated private enterprise. In the later phase of overfishing of whales, exploitation continued even though good scientific information was available to document the decline and its cause, no doubt because of pressure to recoup the large investments in factory ships and fleets of catcher ships.

A new phase of development of Antarctica began with the International Geophysical year in 1955. Scientists from many nations began intensive explorations of the continent. They quickly discovered that understanding the south polar region was crucial for understanding global processes such as weather and climatic change. Its isolation from human disturbance makes it a unique place for discovering normal or baseline environmental conditions, and for monitoring past changes in worldwide climate or pollution from the record trapped in layers of snowfall stored in the icecap. Yet this value to science as an environmental baseline and monitor is subject to a sort of "Heisenberg Uncertainty Principle," – the pristine state is easily disturbed by study itself.

In the late 1960s attention focused on the increasing environmental pollution of Antarctica.[55] Substantial declines in populations of Adélie penguins were observed at three breeding colonies frequented by tourists and scientists. Fifty-six of the gull-like skuas were found dead at Hallett Station, some dying from eating garbage or from colliding with aerial structures.[56] There were localized problems at some of the larger bases and field camps with air pollution, solid waste and sewage, aggravated because biological decomposition of wastes is extremely slow in the cold climate. Some kinds of plants became scarce near stations where they were frequently collected by scientists. Concern developed over contamination of virgin snow surfaces from engine exhaust during aircraft overflights. Perhaps the widest publicity resulted from the discovery that Antarctic birds and mammals contained organochlorine pollutants in their body tissues, even though they lived thousands of miles from the sources of these chemicals. While these contaminants are not thought to represent an immediate threat to Antarctic bird life,[57] they do indicate the serious worldwide nature of contamination with toxic substances. An Environmental Impact Assessment of the U.S. Antarctic Research Program is currently being written.

Looking to the future, Antarctica faces a slowly increasing tourist industry. First came junketing congressmen, bureaucrats, and businessmen at government expense, then private tourists. Now, a cruise ship visits the continent several times each summer where the supreme scenery and ever-popular penguins are prime attractions. Tourists will bring with them the problems of waste disposal, disturbance to native animals, and introduction of exotic species such as dogs. No overall plan for protection of the environment from tourism has been developed, but under

David Thompson

This Adélie penguin colony at Cape Crozier, Antarctica, has recently been designated a "specially protected area." Frequent visits by scientists and tourists were apparently responsible for declines in the numbers of penguins.

the "Agreed Measures" some penguin colonies have been designated as "specially protected areas," and tourists are encouraged to restrict visits to "Areas of Special Tourist Interest."[58]

Plans are currently underway for the harvest in the southern oceans of krill. There is now a surplus of krill since whale stocks which graze on it have been so reduced. Krill could provide much protein for a hungry world, but care must be exercised to insure that this resource is not overused. Since krill is the key organism in the food chain, disruption of the entire Antarctic ecosystem could follow its overutilization. Fortunately, quotas for harvest of krill are being established.[59]

Mineral resources have not been exploited in Antarctica, although large deposits of coal, iron, and some uranium have been discovered. But minerals on land are too difficult to transport and accessibility is the key determinant of value of any resource. Oil, which must be present on the continental shelves, will probably be exploited first.[60] Cold-water ecosystems are thought to be most susceptible to damage from oil spills, and penguins are probably more vulnerable to oil than most kinds of birds. Already, thousands have been killed by oil spills off the shores of South America and southern Africa.[61] Accidents are bound to happen in the iceberg-infested southern oceans. For example, a tanker on the way to refuel a U.S. base in Antarctica had its hull ruptured by collision with an iceberg, but fortunately no oil was spilled, thanks to a double hull.[62] *[more →]*

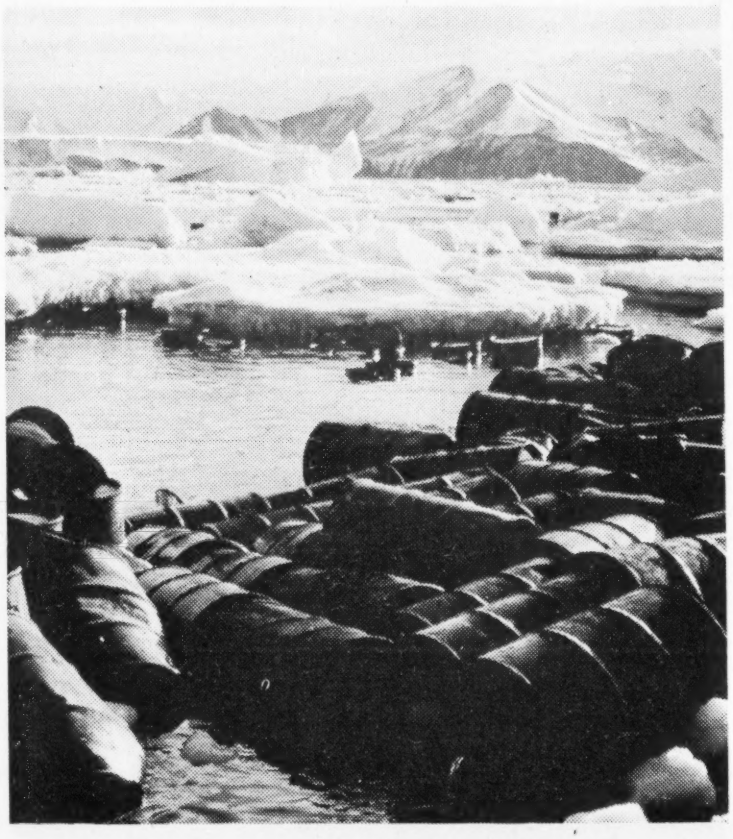
PARALLELS BETWEEN ANTARCTICA AND OUTER SPACE

The two modern frontiers show a number of important parallels in terms of conservation and resource development:

1. Development of both is proceeding despite the high cost of transport.
2. Absence of human disturbance is a fragile scientific resource which needs protection.
3. Lack of biological decomposition slows recycling of wastes.
4. Tourism will be one of the first economic activities. Already detailed plans have been developed for tourist hotels in Earth-orbit.[63]
5. The Space Law Treaty of 1966 was modeled after the Antarctic Treaty, but both are incomplete.
6. Biological resources are likely to be the first ones exploited and damaged.
7. Specially protected areas need to be established.
8. International conservation agreements can be effective but they must be established before vested economic interests develop.

Hence, Antarctica can serve as a model for conservation of the Solar System. The overexploitation and contamination of Antarctica serves as a warning that similar problems can develop in space.

David Thompson



David Thompson

Above, the U.S. Navy dumped 2,000 empty fuel drums into the ocean at Cape Hallett, Antarctica. Many of them washed up onto nearby beaches. Also at Cape Hallett, right, overaged fuel was disposed of by burning, resulting in air pollution.

Lower right, increasing numbers of tourists are visiting the Antarctic, where they may disturb the wildlife.

Below, garbage dump at U.S. Palmer Station.

Paul Ehrlich

David Thompson

We have not been helpless in the face of the more recent environmental problems of Antarctica. The Antarctic Treaty, signed by 12 nations including the U.S. in 1959, internationalizes and demilitarizes Antarctica. Appended to the treaty are a number of "Agreed Measures for the Conservation of Antarctic Fauna and Flora" which are the most comprehensive and effective international agreements on conservation to date. The treaty provides a flexible framework for changing the "Agreed Measures" as new information becomes available, and as conditions change. Consequently, steps are being taken to correct most of the problems mentioned. The value of the treaty is that it established an international mechanism for conservation *before* environmental problems developed. It shows that international cooperation on conservation is possible, and that conservation policies can be very successful when implemented before development of resources creates powerful vested interests which oppose conservation. Unfortunately, the Antarctic Treaty does not cover exploitation of minerals, or exploitation of resources in the seas surrounding Antarctica.

In summary, what happens in remote Antarctica *can* affect the rest of the world: Antarctica has rich resources, both scientific and material, which can benefit mankind if used wisely.

CONSERVATION OF "LIFELESS" ENVIRONMENTS

BECAUSE OF THE FRAGILITY OF LIFE and the values we place on it, conservation concepts have always focussed on preserving living things. Hence the myth has developed that "since there is no life beyond earth, there is no need for conservation." For example, Ehricke wrote:

> In the lunar environment we can apply strip mining techniques and expend vast amounts of cheap energy without "polluting" the environment. Because this environment is "dead" there are no cyclic processes to consider. Lunar strip mining does not interfere with plant or animal life. Processed regolith and rocks are redeposited minus the elements extracted with no noticeable change in appearance.[64]

As in Antarctica, there are many resources which need protection and wise management besides the biological resources. These resources of the Solar System, including raw materials, beauty, and records of the past, have been admirably catalogued by McDougal, Lasswell, and Vlasic.[65] Secondly, Ehricke's statement that the Moon is dead may be premature. The question of whether indigenous lifeforms exist has not been finally resolved for Mars *or* the Moon, in spite of negative findings to date. The negative results simply mean that life as we know it has not been found in the few places where we have looked – but it may exist elsewhere on the Moon or Mars in favorable microhabitats within or under rocks,[66] or in "oases."

Even if the Moon or other planets are truly "dead," the virgin state of the environment should still be preserved in places for science. The Moon's static surface, for example, preserves records of the early stages of formation of the solar system. Even the outer centimeter of the regolith may preserve a record of solar events of the last few million years. And the polar cap of Mars, as Earth's polar cap, must contain records of the past which could shed light on volcanism, storms, and periods of warmer climate when liquid water created channels. A recent proposal has called for a return of a sample from Mars' polar cap.[67]

Proponents of industry in space claim that we can remove industry and hence pollution from Earth's biosphere. But discounting the certain stimulation of industry and pollution on Earth by development of space, and ignoring the possibility that wastes will descend from space to contaminate Earth, this "biosphere" argument still has a central flaw. By migrating into space with our domestic plants and animals, we are not escaping the biosphere but bringing it with us. Man, as one of the dominant species on the biosphere's frontier, will be directly threatened by pollution of the biosphere in space. Will garbage from neighboring colonies puncture or coat the windows of a space habitat? Will radioactive fallout from nuclear explosions proposed by Ehricke or the Outlook for Space Study Group[68] make whole regions uninhabitable by miners?

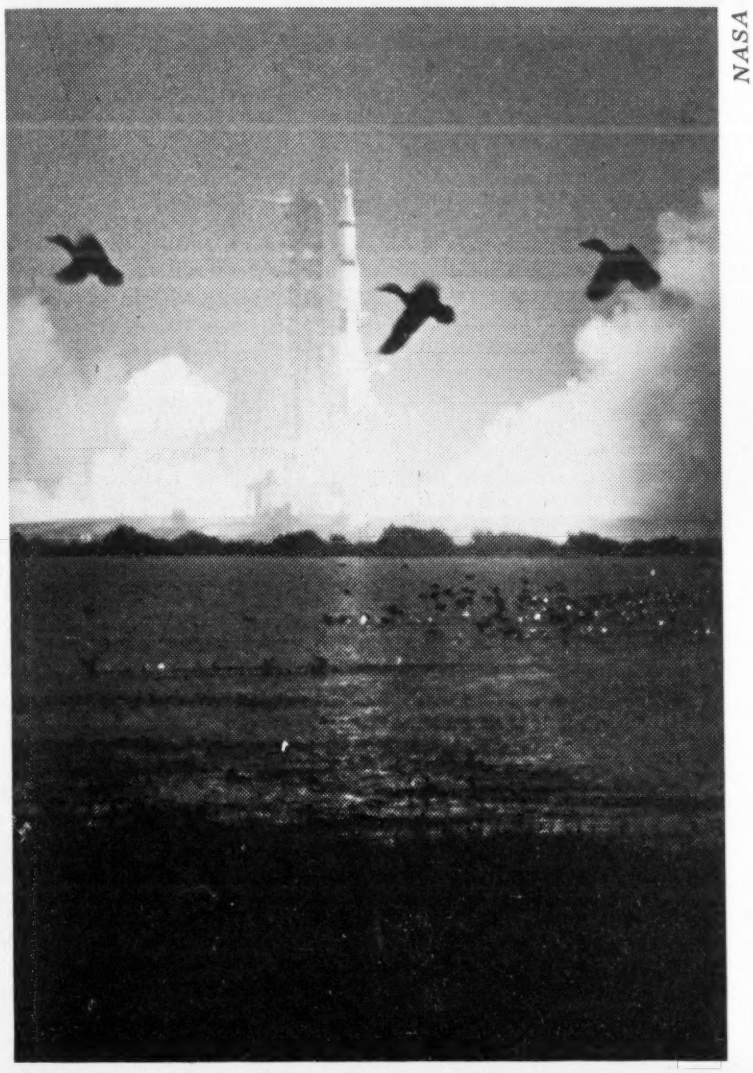
RECYCLING AND POLLUTION

SPACE COLONISTS would have us believe that, because materials will be so expensive in extraterrestrial communities, recycling is bound to be extensively used and hence pollution will be minimized. This is wishful thinking. Although transport costs to Antarctica are high, I saw extensive waste of supplies and no recycling when I was there. Neither Skylab nor the Apollo spacecraft recycled human waste. Most mining processes result in the concentration of some toxic elements which have to be discarded. In recycling operations, toxic contaminants may eventually build up and have to be separated and disposed of. For example, sewage sludge is used as fertilizer, but it may be contaminated with heavy metals, hence repeated applications of sludge can lead to a dangerous buildup of these elements in the soil.

At present the construction and operation of closed ecosystems, producing food and recycling wastes for space colonies, is beyond our technological capabilities.[69] Although no large experimental ecosystems have been constructed and studied, a Russian subject spent one month in a tiny chamber where a tank of algae recycled his water and atmosphere, while producing some of his food.

GOALS FOR CONSERVATION OF THE SOLAR SYSTEM

THE FIRST PRIORITY should be formulating basic concepts and gathering more scientific information. Little has been done to develop integrated conservation concepts, although much has been written concerning survival of microorganisms in outer space, Mars, and even the atmospheres of the outer planets, and about methods of sterilization of spacecraft. A number of studies have been made of atmospheric contamination resulting from rocket exhaust, and one preliminary study of the extra-



NASA

Support facilities for space activities have many "secondary" environmental impacts, illustrated by the flight of ducks during a launch.

terrestrial disposal of radioactive wastes provides insight to the problems of waste disposal in space.[70] Another active area of research is into advanced life support systems for spacecraft or bases, possibly using closed ecosystems. Studies are underway on the biological effects of microwave radiation from satellite solar power stations and of possible biological effects of a decrease in the ozone shield which could result from space shuttle flights.[71] Nevertheless, more research is needed in most of these areas. Given the primitive status of modeling of atmospheric processes, much more research is needed into the effects of space activities on the atmosphere. Some of NASA's studies on the effects of HCl, NO_x, and H_2O on the atmosphere need repeating by several independent investigators, because of their great importance.

Research on the fate of pollutants liberated in outer space has been nearly completely neglected (except for space near the Moon). Studies of the ultimate fate of footprints and discarded hardware on celestial bodies are needed, as well as effects of rocket exhaust. An overall study of the environmental impact of O'Neill's space colonies is needed, and will eventually be required by law.

The immediate goal of additional research should be formulation of concepts about what resources in outer space need conservation, and how best to proceed. These concepts should be expressed soon in international agreements and national laws.

Conservationists have already achieved modest gains through the Antarctic Treaty and the Space Treaty which set international agreements on conservation before development took place. But now plans for the development of both realms are beginning to gather steam, and environmentalists will find themselves far behind unless they take further action now.

Although the Space Treaty of 1967 and later U.N. agreements and conventions prohibit contamination by microorganisms, obligate a nation to pay for damages caused by its satellites, and ban atomic weapons deployment and testing in space, they are only a beginning.[72] Additional international agreements with "teeth" are needed to ban development of military hardware for use in space, prohibit nuclear rockets and disposal of radioactive waste in space, require launching nations to recover and safely dispose of old radioactive satellites, control industrial development, mining and tourism, and set aside specially protected areas. President Carter has called for a "total prohibition" on satellites with nuclear material aboard until "failsafe methods" are developed to prevent recurrence of the Cosmos 954 incident. The agreements should have a flexible framework which will allow extension to cover presently unknown situations.

We must not forget to examine the underlying motivations and objectives for our activities in space. Many advocates of development of space want "to continue technological, industrial, and economic growth without adding burdens to the terrestrial environment."[73] But for those who see growth as a threat to the terrestrial environment, space industrialization which is growth-oriented must be blocked. Development of space is not inherently growth-oriented – for example, the emphasis could be placed on substituting extraterrestrial industries for Earth industries, or for quality of production in space rather than quantity. But I fear that if a no-growth economy is not established first on Earth, then resources of space will fuel further rounds of growth.

The thrust of concern of conservationists of the solar system must continue to focus on Earth where the bulk of humanity will reside for years to come. Yet we must also anticipate a time when the heavens may be crowded with millions of industrious space cities, and be ready to minimize their environmental impacts.

And there are important philosophical questions about the conservation of other celestial bodies. Is it right to engage in planetary engineering – to alter the environments of whole planets to suit our needs? Or, would these better be left as international parks? What if primitive life exists on other planets? After it has been studied, can we allow it to be destroyed or its ecology substantially altered by introduction of Earth's organisms? Do indigenous lifeforms, however primitive, have rights? And who is to participate in harvesting the resources of space, and for what purposes will they be used? The Space Treaty says that "the exploration and use of outer space . . . shall be carried out for the benefit and in the interests of all countries . . . and shall be the province of all mankind."[74] This is a fine idea but it needs further definition and embodiment in specific actions and projects. *[more →]*

Space colonies may never come to pass. The public may balk at paying from $30 billion to $200 billion for apple pie in the sky. Nevertheless, if the public is led to believe today that limitless resources of outer space are there to bail us out when the going really gets tough, then we may never be able to achieve zero population and economic growth, which I believe is essential *whether or not* we develop the resources of outer space. ■

REFERENCES AND NOTES

1. T.A. Heppenheimer and M. Hopkins, *Astronautics & Aeronautics*, March, 1976, p. 64.
2. G.K. O'Neill, *Physics Today* 27: 37 (1974).
3. G.K. O'Neill, *Nature* (London) 250: 636 (1974).
4. K.A. Ehricke, *Acta Astronautica* 1: 602 (1974).
5. P. Abelson, *Science* 171: 21 (1971).
6. R.J. Naumann, (Springfield, Va.: National Technical Information Service, NASA-TN-D-7854, 1974), see abstract.
7. "Mariner 10 Yields Few Photos," *Astronomy*, June, 1975, p. 64.
8. Naumann, NASA-TN-D-7854, see abstract.
9. A.C. Clarke, *The Promise of Space*, (New York: Harper & Row Publishers, 1968), p. 208.
10. M.S. McDougal, H.D. Lasswell, and I.A. Vlasic, *Law and Public Order in Space* (New Haven: Yale Univ. Press, 1963), p. 539.
11. G.K. O'Neill, *Physics Today* 27: 38-39 (1974). G.K. O'Neill, *Science* 190: 945 (1975).
12. J. Lacy, 1978, Office of Public Affairs, Goddard Spaceflight Center, Greenbelt, MD, personal communication.
13. *Astronomy*, March 1976, p. 57.
14. I.L. White, *Law and Politics in Air, Sea, and Outer Space* (Indiana: Purdue Univ. Studies, 1970), pp. 53-54.
15. McDougal et al., *Law and Public Order*, pp. 534-5.
16. *Feasibility of Space Disposal of Radioactive Nuclear Waste, II-Technical Summary*, NASA TM X-2912, Lewis Res. Center, Cleveland, Ohio (1974). *Outlook for Space* (Washington, D.C.: NASA Sci. and Tech. Information Office, 1976), pp. 88-89.
17. Ehricke, *Acta Astronautica* 1: 612-614.
18. *Outlook for Space*, pp. 182-183.
19. McDougal et al., *Law and Public Order*, pp. 536-539.
20. Problems of radio interference from satellites were discussed at the International Telecommunications Satellite Consortium (INTELSAT) Conference in Geneva in 1976 (*Astronomy*, March, 1976, p. 57).
21. White, *Law and Politics*, p. 182.
22. R.N. Watts, Jr., *Sky and Telescope* 40: 15 (1970).
23. C.S. Sagan, E.C. Levinthal, and J. Lederberg, *Science* 159: 1191 (1968).
24. "Amino Acids in Both Moon and Meteorite," *Physics Today* 24: 18 (1971).
25. D. Kindschi, 1978, Public Affairs Office, North American Air Defense Command's Space Defense Center, Cheyenne Mt., Colorado Springs, CO, personnal communication.
26. O'Neill, *Nature* 250: 636. O'Neill, *Science* 190: 946.
27. O'Neill, *Physics Today* 27: 37.
28. F.J. Dyson, *Science* 131: 1667 (1959); and F.J. Dyson, "The Search for Extra-Terrestrial Technology," in *Perspectives in Modern Physics* (New York: Interscience Publishers, 1966): both cited by R.N. Bracewell, *The Galactic Club: Intelligent Life in Outer Space* (San Francisco: W.H. Freeman & Co., 1974), pp. 115-116.
29. Dyson, *The Galactic Club*, p. 115.
30. *Science News*, September 25, 1976, p. 199.
31. Sir F. Hoyle and C. Wickramasinghe, *New Scientist* 17 November, 1977, pp. 403-404.
32. H.C. Corben, and P. Stehle, *Classical Mechanics*, Second Ed., (New York: John Wiley & Sons, 1960), pp. 73-74.
33. K. Hindley, *New Scientist*, 7 October, 1976, p. 16.
34. R.L. Thompson, J.R. Ramler, and S.M. Stevenson, *Study of Extraterrestrial Disposal of Radioactive Wastes, Part I*, NASA TM X-71557, Lewis Res. Center, Cleveland, OH (1974), pp. 4-5.
35. Lacy, 1978, personal communication.
36. "U.S. Wary of Using Atom Device in Satellite Flight Across Cuba, *New York Times*, 19 May, 1961.
37. C. Richards, "Space Junk," *Parade*, 18 July 1976; and L. David, "Concern Mounts in Wake of Cosmos 954," *Newsletter of the National Space Institute*, March, 1978.
38. *Astronomy*, October 1976, p. 57.
39. R.J. Smith, *Science*, 200:29 (1978)
40. R.F. Wilson and H.M. Dieckamp, *Astronautics & Aeronautics*, October 1965, pp. 60-65.
41. P. Gwynne and E. Clark, "Our Eye on the Sky," *Newsweek*, 6 February 1978, p. 16.
42. H. Jaffe and P. O'Riordan, "Isotope Power Systems for Unmanned Spacecraft Applications," *Intersociety Energy Conversion Engineering Conference Proceedings* 7: 534 (1972).
43. "Cosmos 954: An Ugly Death," *Time*, 6 February 1978, p. 29.
44. R.I. Weiner, D.W. Pyatt, and M.D. Starr, "Navy Transit RTG Safety and Test Integration from User's Viewpoint," *Intersociety Energy Conversion Engineering Conference Proceedings* 7: 541 (1972).
45. "Microwaves Seen As Lethal Tool," *West Bend News*, 23 November 1976, sec. 1, p. 14, col. 1.
46. Ibid.
47. R.L. Adams and R.A. Williams, Biological Effects of Electromagnetic Radiation (Radiowaves and Microwaves) Eurasian Communist Countries (U), Department of Defense, Defense Intelligence Agency, DST-1810S-074-76, p. vii (March 1976). The report concludes (p. vii) that "if the more advanced nations of the West are strict in the enforcement of stringent exposure standards, there could be unfavorable effects on industrial output and military functions." The report also suggests possible uses of microwaves for lethal weapons.
48. R.P. Larkin and P.J. Sutherland, *Science* 195: 777 (1977).
49. "Energy Beamed from Solar Satellite Might Jam Police, Taxi and CB Radios," *Washington Post*, 21 February '78.
50. R. Cicerone and D.H. Steadman, "The Space Shuttle and Other Atmospheric Chlorine Sources," Hearings Before the Subcommittee on Public Health and Environment of the House Comm. on Interstate Commerce, Fluorocarbons — Impact on Health and Environment, 93rd Cong. 2d Sess. 266 (1974), cited by C.Q. Christol, *Journal of Space Law* 4: 26 (1976).
51. Hearings on Planetary Science and the Earth's Upper Atmosphere, 94th Cong., 2d Sess., p. 204, cited by C.Q. Christol, *Journal of Space Law* 4: 26 (1976). Other environmental impacts of the U.S. Space Shuttle are reported by R.S. Lewis, *New Scientist* 77: 414 (1978).
52. W.C. Wang, Y.L. Yung, A. Lacis, T. Mo, and J.E. Hansen, *Science* 194: 689 (1976).
53. "Skylab Rips Hole in Ionosphere," *Astronomy*, April, 1975, p. 60.
54. I. Cameron, *Antarctica: The Last Continent* (Boston: Little, Brown & Co., 1974), pp. 57-73.
55. For a comprehensive review see B.C. Parker, ed., *Conservation Problems in Antarctica* (Lawrence, KA: Allen Press, 1972).
56. B. Johnston, *Nature* (London) 231: 468 (1971).
57. R.W. Risebrough and G.M. Carmignani, "Chlorinated Hydrocarbons in Antarctic Birds," in *Conservation Problems in Antarctica*, ed. B.C. Parker (Lawrence, KA: Allen Press, 1972), p. 77.
58. W. Sullivan, "19 Countries to Discuss Antarctic Resources," *New York Times*, 17 January 1977.
59. S. Yanchinski, "Shrimps Offer a Whale of a Catch," *New Scientist* 77: 340 (1978).
60. "Antarctica: World Hunger for Oil Spurs Security Council Review," *Science* 184: 776 (1974).
61. A Westphal and M.K. Rowan, *Ostritch Supplement* 8: 521 (1971).
62. *Antarctic Journal of the U.S.* 11: 40.
63. K. Ehricke, *Advances in Astronautical Sciences* (American Astronautical Society) 23: 271-280 (1968).
64. Ehricke, *Acta Astronautica* 1: 602 (1974).
65. McDougal, Lasswell, and Vlasic, *Law and Public Order*, 780-781.
66. "Antarctic Model for Martian Life," *New Scientist* 77: 272 (1978).
67. R.L. Staehle, *Spaceflight*, 1976, p. 383-390.
68. *Outlook for Space*, p. 182.
69. A. Ballester et al., *CoEvolution Quarterly* 12: 96 (1976).
70. Thompson, Ramler, and Stevenson, *Extraterrestrial Disposal*, Part I.
71. For a summary of current projects see *Research and Technology Objectives and Plans Summary*, Research and Technology Program, NASA, produced annually.
72. The Space Treaty and agreements are reviewed by White, *Law and Politics*, and by O.O. Ogunbanwo, *International Law and Outer Space Activities* (The Hague: Martinus Nijhoff, 1975).
73. Ehricke, *Acta Astronautica* 1: 602.
74. White, *Law and Politics*, p. 183.

Comments on Astropollution

PAUL & ANNE EHRLICH

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Litter on Mars. Viking 2's surface sampler shroud.

Thompson raises many important points about the environmental problems of space colonization, all of which will make it seem an even less desirable prospect to environmentalists than it seemed before. The comparisons with Antarctica are especially compelling to us — we've seen the mess being made there. In our view the major immediate concern remains the tendency for plans in space to divert attention from problems on Earth. But we are now more impressed than ever about the need to pay more attention to the environmental impacts of *all* space ventures.

LYNN MARGULIS

Microbiologist at Boston University; author of Origin of Eukaryotic Cells; *co-deviser of the Gaia Hypothesis*

Thompson quotes, ". . . Many advocates of development of space want to 'continue technological, industrial, and economic growth without adding burdens to the terrestrial environment." There is no need to go on, as Thompson has, and say, "But for those who see growth as a threat to the terrestrial environment, space industrialization which is growth-oriented must be blocked."

The reason there is no need is that the original statement which implies space development is possible without burdens to the terrestrial environment is religiomystical nonsense. We humans as a species are as tied to Mother Earth as the earthworm, the mole and the sowbug; it is only our incredible arrogance and immense capacity for self-delusion that permits such gobbledeguck statements as the one quoted above by Thompson. In that vast space colony how will we eat, swim, read poetry and have our waste removed at the same time? Where will our nitrogen, sulphur, phosphorus, oxygen and cheesecake come from? How much space will our industrialist (and his wife) need if he is to direct the factory: 10 acres for his country home and tennis courts? Or are the colonists to live, not in ticky-tacky but in veritable people-concentration camps?

We know of no stable ecosystem for the support of men, their follies and their co-evolved species that is smaller than the entire surface of the Earth. At least, not yet. And we are not yet prepared to launch the skin of Gaia.

It is not that space industrialization which is growth oriented must be blocked, it is that it will be blocked. Exponential growth is always followed by cessation: which do we prefer, increase in death rate or decrease in birth rate? The answer, probably, is that we will get both and extinction of *H. Sapiens* will follow. The questions are: When? and can we do anything to forestall the inevitable? Growth-oriented space industrialization is not possible except in the very shortest of runs. Perhaps the entire garbagization of space ought to be looked at as a desperate mechanism to decrease entropy on the Earth at the expense of increased entropy in space, to paraphrase Ramón Margalef.

Of course I agree with Thompson's assertions: Antarctica, Alaska and Space ought to be wisely protected insofar as possible by international agreements. Space colonization can never be a panacea, and especially it will never solve our population problems. Who knows even if it will be possible in any form? Of course research must be done, and sensible research at that, on closed ecosystems that may eventually fly. Even more interdisciplinary research needs to be done on the interaction of the biota with the sediment and atmosphere, now and in the past.

On the nitpicking level, Thompson is just plain wrong that "microorganisms can certainly reproduce under the relatively mild conditions found on Mars . . ." For example see Mazur, et al., 1978, "Implications of the results of the Viking biology experiments," **Space Science Reviews** (in press).

On the larger level, however, we will either be a part of the continued biospheric recycling, no matter if it extends into near space or not, or the biospheric recycling will continue (as it did five million years ago), without us.

ERIC DREXLER

MIT student; L-5 Society activist; author of "The Space Colonies Idea" and "Solar Sailing" in Space Colonies

David H. Thompson has done an admirable job of collecting possible reasons for caution in developing space; it gratifies me to find nothing really new in so thorough a work.

I fully agree that studies of secondary effects must be undertaken, especially of microwaves and of launch vehicle effects on the atmosphere. Still, all problems yet suggested (those that warrant serious consideration, at any rate) would yield to forseeable technology. Planetary surfaces (particularly those with life, should any be found) raise substantial conservation issues, as does release of junk and dust in near-Earth space. In future centuries, near-Sun space may require protection. Nevertheless, since space development will breathe life into lands more blasted than any strip-mine, I would scarcely call the process "spoiling." The "erroneous notions . . . listed . . . in their most extreme form" primarily need qualifiers like "In the next century . . ." or "In general . . ." or ". . . for many centuries to come" to render them *true* — with consequences some ideologies find hard to accept.

Contamination of the Void: The "laws of nature which make pollution a problem on Earth" largely result from conditions and workings of the terrestrial environment. Most really *are* irrelevant to space. If a spacecraft takes x *hours* to fill a ten kilometer radius with a certain density of particles, it will take 10,000 times x *million years* to fill cis-lunar space to the same average density — which gives plenty of time to build less dusty spacecraft. With the Shuttle, no hazardous satellite need ever fall uncontrolled again, and with the age of cheap spaceflight around the corner, to speak of old space junk bothering people is to assume people will be idiots. Even *millions of tons* of mass-driver pellets will be difficult to find among the *trillions of tons* of rubble already occupying the same volume, and mass-drivers will surely be obsolete within a century. Nuclear power should find little use in the inner solar system, and without air and water to disperse wastes, they simply sit. Surely *someone* can turn off a broadcasting satellite *somehow* in all those thousands of years!

Contamination of Celestial Bodies: If the moon and asteroids aren't sterile, I will personally eat them. If the rest of the solar system isn't sterile, I will be amazed. Still, we will look for life and respect it if we find it, judging by present attitudes and remembering that planets are comparatively worthless anyway. I have yet to hear of a terrestrial organism that can multiply in any known or expected extra-terrestrial environment — without human aid, of course. On dead worlds, science can study far faster than industry can disturb; with a few pristine samples and later field surveys (why must they be near lunar bases? Will we be that helpless?), geologists can work wonders.

Limits of the Solar System: Yes, Virginia, there *is* a resource base able to support a long era of exponentially growing population and wealth per capita. An "elementary analysis" of the future should not rely on museum-bound hardware like the Shuttle. Growing wealth and capability should permit mass exodus — but well into the next century, which is indeed too late to avert the present crunch.

Environmental Impacts on Earth: Poisoned dust from space a problem? Nope. Dangerous spacecraft falling out of the sky is a symptom of a half-paralyzed space program, not a capable one. *No* reactor can be designed to *permit* a nuclear explosion, any more than a lawn mower can be designed to *permit* its use as an aircraft. More uranium falls from the sky in the aforementioned dust than in Russian satellites . . .

In the future, space ability can prevent such natural "environmental impacts" as the 1908 event which flattened 60 miles of Siberia, or the rare events which leave 20 kilometer craters in Earth's crust — preventing one of those might be worth quite a lot.

Microwaves: The Solar Power Satellite (SPS) can meet the strictest standards set by the nations which did the research Thompson cites. The May, 1978, **Mother Jones** contains falsehoods regarding the SPS — they claim that it could be used as a weapon, despite the impossibility of re-aiming the beam at an uncooperative target, and despite the impossibility of forming a beam more than 1/5 the intensity of sunlight. See the May **L-5 News** for an anticipation of this sort of charge, and a general discussion of the microwave issue — the SPS looks clean, even assuming the worst about microwaves, but deserves further study. With regard to the ionosphere, communications disruption in certain bands seems the only effect, and will be offset by cheap satellite communications as ground stations shrink to wrist size.

Rocket exhaust: Solid propellants won't be used long if we get serious about space. How many flights to *double* stratospheric water? How large a greenhouse effect? Numbers please! See above on ionosphere (note: the ionosphere includes many satellite orbits, so it's pretty thin stuff). If real problems turn up with *water* as a pollutant, laser rocketry will probably let us develop systems using argon, an inert gas, common throughout the atmosphere.

Environmental Problems in Antarctica: Ocean . . . whales . . . elephant . . . past climate record . . . plants . . . exotic species . . . krill . . . ecosystems . . . *Parallels Between Antarctica and Outer Space:* 1) Both exist. 2) People are interested in them. 3) Both appear in Thompson's article.

Conservation of Lifeless Environments:

1. Thou shalt not pelt thy neighbor's window.
2. Thou shalt let scientists land first.

Goals for Conservation of the Solar System: "Pollution" means more than "a by-product of human activity," and only human values can serve to define it in space. David Thompson is not explicit about his values. He calls for studies of "the ultimate fate of footprints and discarded hardware on celestial bodies," and refers to their destruction as a "healing process." I continue to puzzle over this. Would the world be improved if the dinosaurs had been reluctant to leave footprints, dung, and bone? I think not. Only a deep hatred for human beings and their works seems able to account for Thompson's value assumptions, and for the vast number of things he sees as "pollution." Seeing "space junk" from a future (pro-human!) perspective as "relics of the Great Liberation" suggests that it will outlast our solar system, lovingly preserved.

Thompson states that ". . . space industrialization which is growth oriented must be blocked," and speaks of emphasis on ". . . quality of production in space rather than quantity." I am troubled by a vision of the David Thompsons of our rich, white, western world addressing the world as a whole to answer the question: "Why do you oppose the creation of material wealth?" Visions of enraged mobs frighten me.

In the real world, space industrialization *is* inherently growth-oriented. If hardcore limits-to-growth advocates truly have courage of their convictions, I call on them to fight it — but to state their motives clearly and refrain from falsehoods — if they value democracy and the informed public it requires.

> "At every crossway on the road that leads to the future, each progressive spirit is opposed by a thousand men appointed to guard the past."
>
> —Anon.

—A note to Lynn Margulis: Comets are chock-full of nitrogen and some sulfur. Asteroids are chock-full of sulfur and some nitrogen. *Every* celestial body contains *every* natural element, for the same reason the Earth does; asteroids in particular can support human civilization quite adequately.

GERARD O'NEILL

Physicist at Princeton; inventor of storage rings for nuclear accelerators; deviser of Space Colonies; author of The High Frontier

One of the unique opportunities given to us by the space habitat concept is that of open debate and review before any firm decisions are made. This is a refreshing change from the circumstances in which most of the large-scale technological choices of the recent past were made: nuclear weapons, nuclear electric power, the supersonic transport, and the use of long-lasting chemical insecticides, to name just a few. It's also fortunate that because of the high standards of education, communications, and availability of leisure time in the most highly developed industrial nations, people there have become sensitive to potential environmental problems in some cases before they have had a chance to become realities. Naturally enough, that sensitivity tends to be confined to areas that are already industrialized and wealthy; throughout most of the world, where poverty prevails, no one has the free time or the energy to devote much concern to the preservation of the environment.

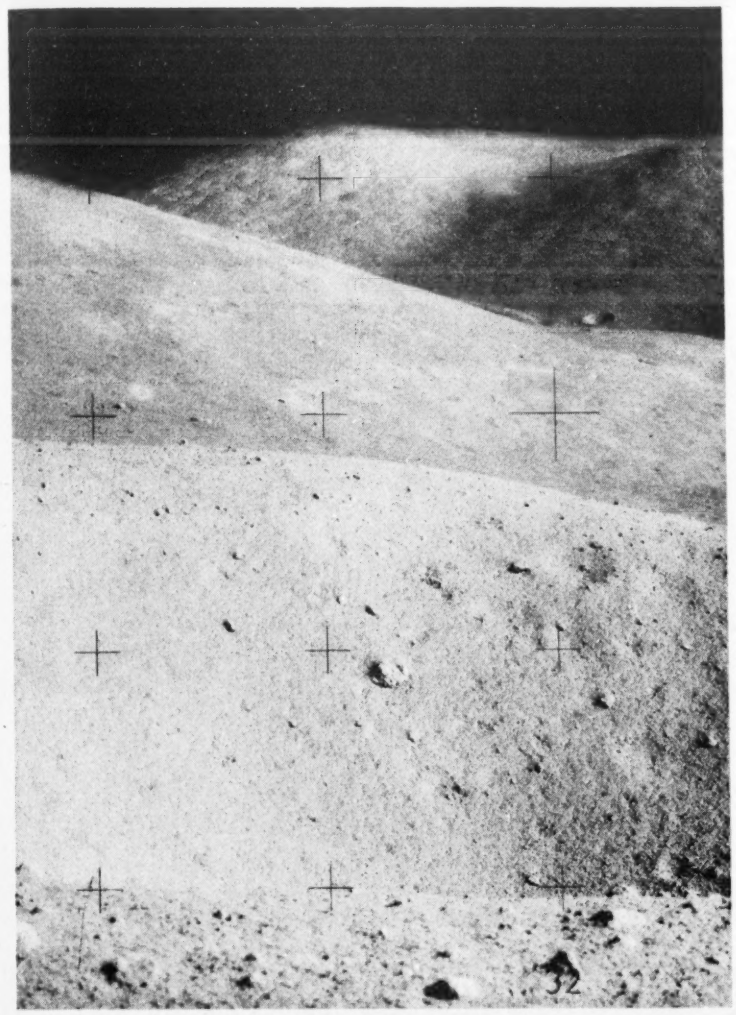
As readers of my book, **The High Frontier**, must know, I began my work on the space-colony concept with a serious concern for the continuation of industrial growth within the fragile confines of our biosphere, and I retain that concern. For that reason I have welcomed papers on environmental effects in space in the Princeton Conferences,[1,2] and a paper specifically on lunar environmental sensitivities was presented at the 1977 Princeton Conference,[2] now published by AIAA. That concern, and a desire to maintain the openness of discussion of the space-habitat concept, combine to make me take time from the ongoing positive research activities to consider Mr. Thompson's paper.

The article has the virtue of a comparatively calm and reasonable tone, and there has been a clear attempt to document at least some of the statements made. The deficiencies of the paper stem, as far as I can tell, from the fact that the issue of environmental effects seems to have been approached from an already-established, strong previous opinion that the space-manufacturing program should not be allowed to take place. I hope that in his later writings Mr. Thompson will rise to standards of accuracy, relevance, and objectivity high enough so that his later works can survive the normal process of peer-review, and take their place among serious articles of technical-journal quality. Work of that quality bearing on environmental issues could make a strong positive contribution to the sensible planning of a space-resources program.

Clearly I cannot take responsibility for statements made by any individuals other than my own small staff at Princeton and members of study groups, etc. while working under my direction. In discussing Mr. Thompson's paper, therefore, I will often have occasion simply to use the phrase "**not GKO'N,**" indicating that the statement or position quoted is **not my own.** "**AP**" will mean **Mr. Thompson's article ("Astropollution")**, wherever possible accompanied by a section and paragraph reference. "**THF**" means "**The High Frontier**" (Morrow Edition).[3]

AP, 2nd paragraph: ". . . an economic frontier in space will undermine the development of zero-growth philosophies and economies on Earth, spark new demands for Earth's resources, . . ." This seems to be the main rationale of the paper: the author has pre-judged that a zero-growth economy on Earth, evidently to be entered upon as soon as possible, is right for humanity, and that any alternative to it is wrong and so constitutes a threat. This interpretation is reinforced by the last sentence of the article, expressing the fear that if the development of resources in space comes to pass "then we may never be able to achieve zero population and economic growth, which I believe is essential . . ."

In adopting this viewpoint the author overlooks the fact that the vast majority of the human population is still in a state of poverty, much of it starving, and that the urgent need perceived by that majority is for industrialization, which has been in modern times the road to more productive agriculture and an improved standard of living. I have covered this topic in Chapter 2 of THF. It is no accident that there is now representation from India on the Universities Space Research Association advisory panel that I chair; the Indian representa-



Virgin wilderness on the Moon.

tive, Dr. Rashmi Mayur, a member of the long-range planning commission of the Indian Government, has gone over the figures in that chapter with care and has found them in agreement with the conclusions reached by his own Commission. Economic growth in the developed world is another matter. If the United States is content to see its own position in the world shrink to a level appropriate to its population (less than 4% of the world total by the year 2,000), and is content to redistribute its wealth internally, rather than earning new wealth, then it is free to adopt zero-economic-growth policies. For most of the world, though rapid economic growth is a vital, urgent need, if massive starvation is to be averted.

The phrase "spark new demands for Earth's resources" is not substantiated in AP and is entirely contrary to the point of the space-habitat concept.

Six statements are then listed in AP, and attributed to proponents of space habitats. Paraphrasing for brevity,

1) "Pollution or depletion of the resources of the solar system are impossible." Not my viewpoint, and specifically contrary to the discussion in THF, Chapter 11, pp. 208-209.

2) "Emigration to space colonies or to other planets can help to alleviate Earth's population crisis." THF, Chapter 3, p. 40 pointes out the impracticality of the settlement of other planets as a significant option. Emigration to space colonies will be, in my opinion, a viable option for individuals and families on Earth within the next century. I see it as naturally following, rather than preceding, the improvement of the human condition by return to Earth of some of the energy resources of nearby space. (More discussion of this a little later.)

3) "Industry in space will have no detrimental impacts on Earth or on the biosphere." True, if the industry is set up and operated with due regard for potential environmental impact. Obviously false if no such regard is taken. A study of my book and articles will show that my advocacy has been reserved for those alternatives that preserve the environment.

4) "No need for conservation of remote regions." Not my viewpoint.

5) "Conservation applies only to living resources, so no need for conservation of the 'dead' environments of space and celestial bodies." I have never made any such statement.

6) "Space colonists will make such extensive use of recycling that they will produce almost no pollution." A true statement, *if* a program is carried out in a proper way. More on that later. Now as to individual sections of AP:

AP, "Contamination of the Void." 5th paragraph: "If the Moon ever supports a sizeable population or regular spacecraft traffic, the induced atmosphere might become dense enough to interfere with some uses of the Moon, such as its use as a base for astronomical observations." The surface of the Moon is a singularly poor location for astronomy, because any lunar observatory would cost twice as much to emplace as one located in orbit, and would have 50% of its view blocked by the Moon at any given time. Nevertheless, in my work, and in work done under my direction, plans have been limited to a relatively small lunar base with a stable population estimated as only ten or twenty people. The lunar environment is a fragile one, and any large-scale emission of rocket exhausts near the lunar surface could set up an unwanted, long-lived lunar atmosphere. For that reason we have considered for the transport of lunar material the mass-driver device. That would operate without rocket exhausts and would transfer bagged lunar soil to space without heating or the discharge of materials to the lunar environment. (Cf. Vondrak '77.)[4]

Exhaust of materials from mass-driver reaction engines is then discussed in AP. As I have stated (O'Neill, A/A '78)[5] the emission of solid materials anywhere in the Earth-Moon system would be restricted to powder form, dispersed electrostatically, and would be restricted to small quantities over a period of only a few years, before liquid oxygen from the processing of lunar soils becomes available. For example, in the program of A/A '78, particulate emissions are restricted to less than 1% of the natural micrometeoroid infall rate to which the Earth has been subjected for several millions of years (i.e., less than 1% of 400 tons per day). In that program, after only a few years the mass-drivers would switch over to using as reaction mass oxygen, which would disperse naturally in molecular form, and which is certainly not a poison.

Reference is made to "disposal of radioactive wastes in space, use of nuclear rockets . . . , and underground nuclear explosions on the Moon, and . . . the explosion of nuclear devices to vaporize the icecap of Mars." None of these suggestions has received my endorsement or has been a part of any program under my direction. The most up-to-date scenario for the development of resources in space[5,6,7] is based on the use of solar power exclusively, for mass-drivers both in space and on the Moon, and for processing plants to be located in space.

Last paragraph: "Some of the early satellites may continue to usurp portions of the (communications) spectrum for thousands of years." It is not reasonable that they would be allowed to do so if they became a nuisance; on a much shorter time scale it would be quite reasonable to carry out the necessary housekeeping chore of collecting obsolete satellites.

AP, "Contamination of Celestial Bodies." I certainly endorse the prevention of contamination of celestial bodies (though as the author points out, it may have taken place already). From that point of view it is far less dangerous to set up activities in free space than to attempt, for example, to establish a large human population on the surface of Mars.

AP, "Limits of the Solar System." The first paragraph implies that I advocate a 20,000-fold increase in the size of the human population, a factor corresponding roughly to space-colony land area based on the materials available in the asteroids. That is not the case; in THF, Chapter 11, p. 208, I wrote ". . . the material reserves in the asteroid belt are sufficient to permit the construction of new land area totalling 3,000 times that of the Earth. In making that statement my purpose was not to encourage a corresponding growth of the total human population, but rather to suggest that materials limits alone should not be used as the justification for the imposition of limits on individual human freedoms. . . . it is very difficult to abrogate one freedom without compromising others . . . in a society held by law to a steady-state condition, freedom of thought and of inquiry would be dangerous, and would probably be suppressed."

I also stated in the same chapter that "in the same spirit, not of encouraging thoughtless growth but of opening possibilities which will encourage the extension rather than the curtailment

Continued on p. 104

I Decide Who Goes to the Mental Hospital

by Chip Barker

Photographs by Chip Barker

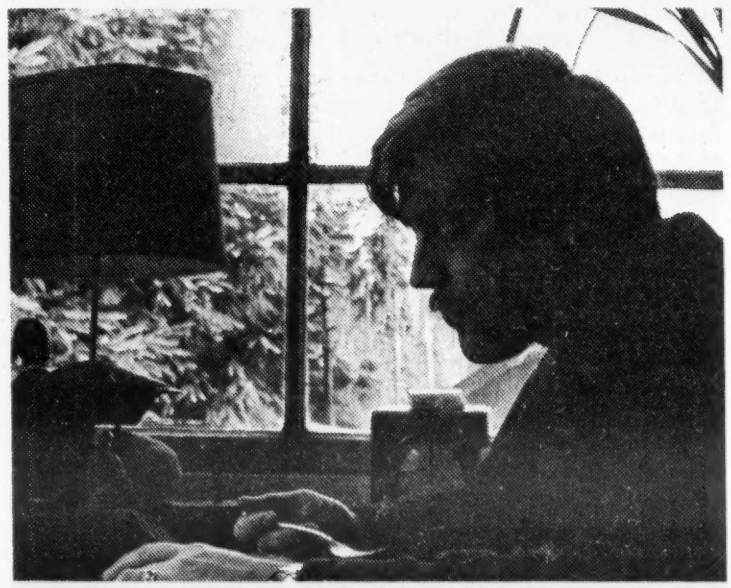
A typical weekend . . .

August 31, 1977, 2:00 a.m. Beep! Beep! Beep! Beep! The Motorola Pageboy in my pocket calls me to attention for the fourth time this Saturday evening, and I dial the answering service. The voice apologetically asks me to call the Sheriff's office regarding a 34-year-old woman who believes she is demon-possessed and slashed her wrists trying to escape from herself. She's had stitches and is in a padded holding cell at the county seat . . .

I've been working as the commitment officer for two counties in Washington and 50 times this month I've faced the confusion, distortion, mania and paranoia of men, women and children who reached their "boiling point" emotionally. My 3,300 square mile catchment area includes about 80,000 persons yet has per capita suicide and commitment rates higher than the greater Seattle area. I've often wondered why this area is so chronically troubled. Is it the never-ending rain; the seasonal nature of logging and fishing industries; or the sulfur dioxide fumes from the pulp mills? Faces are gray and long as I walk the sidewalks, a depressive resignation accompanies the fog . . .

3:00 a.m. At the county jail I read the deputy's report, identify myself and read her rights as required by law. Her thought disorder prevents the alienation most people experience at this stage of the evaluation, as I drone on about her right-not-to-be-presumed-incompetent-if-commited, her right-to-remain-silent, her right-to-an-attorney, her right-to-refuse-medication-24-hours-before-the-court-hearing-to-determine-if-she-requires-further-hospitalization, her right-to-present-evidence-on-her-behalf-and-call-witnesses and her right-to-a-copy-of-all-documents-in-the-court-file. And that anything-she-says-may-be-used-against-her.

The fluorescent lights hum loudly during the pause as I finish, and the Demon has her attention plastered

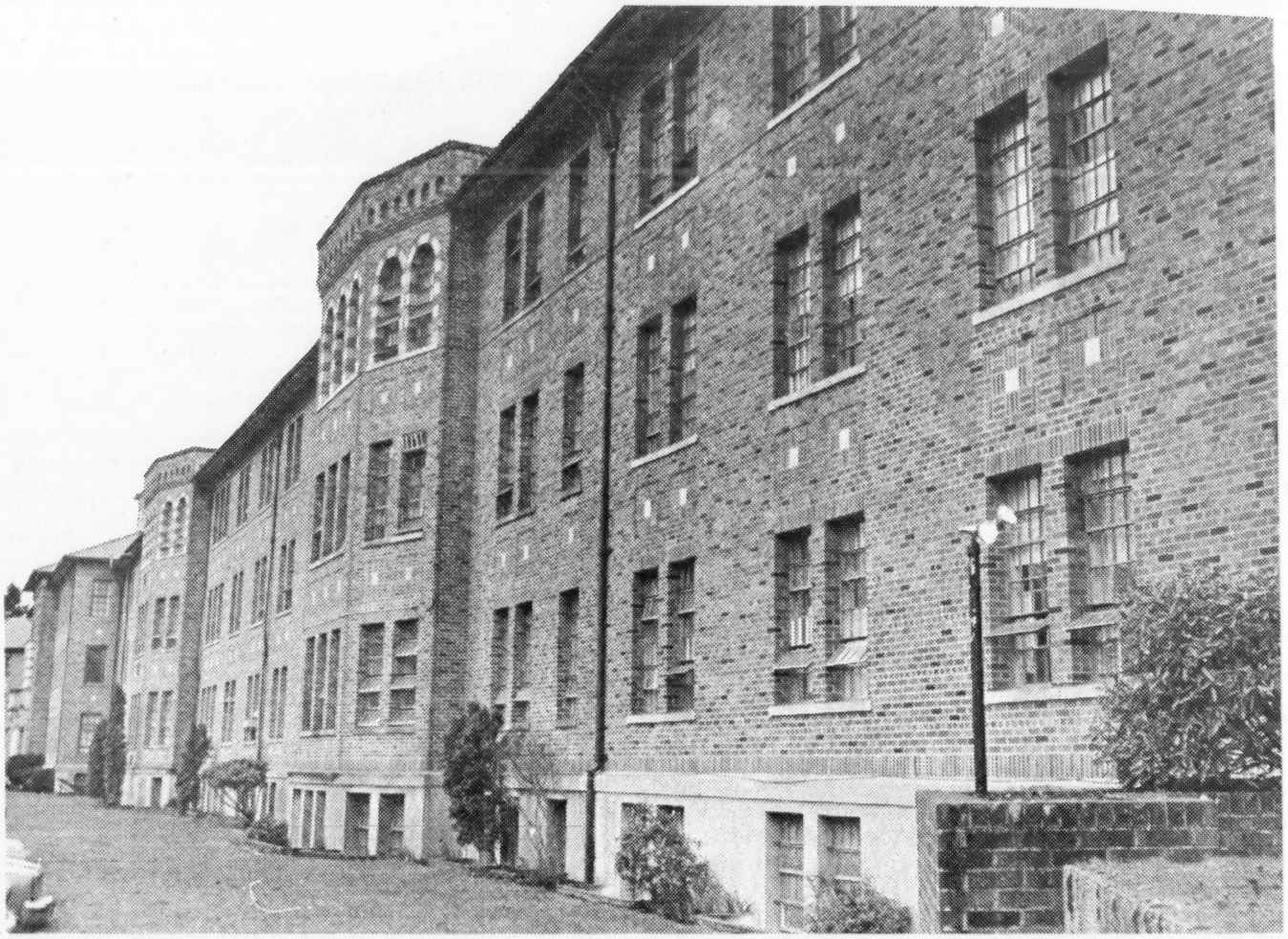


The author

I am employed by the Grays Harbor/Pacific Counties Community Mental Health Clinic and Family Service Center. At our main office in Aberdeen fourteen clinical workers provide services to the two county catchment area. My title is Mental Health Professional. In our county all mental health services are provided by our non-profit corporation via contract with the county commissioners.

This thing is bound to foam protest from do-gooders and libertarians from San Diego to Bangor. Let me go on record as being a non-mindless participant in a machine that appears to presently offer the least harmful available alternative. I'm not selling institutions. I'm living and dying and so are the folks I work with.

—Chip Barker



The hospital is Western State Hospital, located in Ft. Steilacoom, Washington. With an average population of 4,300 residents at any given time, it is run by the Washington State Department of Social and Health Services. Washington ranks No. 50 in the nation on per capita expenditures in mental health. This is public fact, not my opinion.

to the wall. Six curious eyes glare at us through the observation window as I try to "warm up" the situation to get her to talk. Jails are frequently reassuring to the more fearful or disoriented people I see, as it is a very simple situation with very predictable limits. It also guaranteed one evening that I didn't get my ass kicked by a 300 pound gyppo logger who had just tried to "purify" his wife with a double-bladed axe on their 10th wedding anniversary.

Her name is Marie and God is angry with her, she flatly reports. "No one touch me! I am dead!"

I enter her delusion gently. "God has sent me to help the Devil be done with her business here . . . He wants you to ignore me." She looks startled. "The Devil can ignore everything I say . . . you will easily ignore me."

"I am Demon Possessed . . . Don't touch me!"

"Who told you to hurt yourself?"

"The Devil."

"My way of helping the Devil to finish her business is to find a place for you to stay where you can rest now. I am going to ask the deputy to take you to a hospital now for rest . . . rest now . . ."

3:30 a.m. Marie has evidenced that she is in danger of taking her own life. Her delusions and hallucinations indicate she is experiencing a mental disorder. I complete four copies of the Custody Authorization, the Return of Service, the Notice of Rights, and I write the Petition for Involuntary Treatment. The deputy will find a matron somewhere and take Marie to Western State Hospital in the back seat of his prowl car, in hand cuffs padded to protect her newly sutured wrists.

4:15 a.m. Driving through the rain toward home I thank the Great Whoever that this investigation was easy. I'm tired and some decisions come harder than others. Sometimes I have no doubt that were I to let the person I'm evaluating back on the street he would drink some Drano or set his house on fire with himself inside. The decision comes easily when the safety of others is involved. When an individual is non-psychotic and suicidal I'm haunted by whether I have the right to "play God" and keep him from harming himself. I can only infer he is compulsed and not capable of an informed choice. I can only hope I'm doing him a favor.

Marie didn't require a full mental examination. Research has shown somewhere that a five minute diagnosis of schizophrenia correlates very highly with the results of more extended evaluation and my experiences confirm this. Most psychotic folks let you know right away! The mental status examination I use evaluates the person by asking these questions:

APPEARANCE – is it appropriate to the person's age and routine in life?

BEHAVIOR – is it cooperative; agitated; or retarded? Are posture; mannerisms appropriate?

AFFECT – is feeling tone appropriate? *[more➔]*

STREAM OF MENTAL ACTIVITY – is thinking hyperproductive; are connections loose; are responses delayed?

THOUGHT CONTENT – are hallucinations, delusions, obsessions, or phobias present?

ORIENTATION – can person place themselves in place and time; recognize familiar persons or places?

MEMORY – are recent and/or remote memories available to person?

INTELLECTUAL FUNCTIONING – is general information available to person; can he abstract normally (for him)?

JUDGMENT – can he reason adequately?

INSIGHT – is there awareness of problem/cause/possible solutions?

An hour or more may be spent performing a mental status exam but usually I don't find a complete evaluation necessary. Washington law requires only that I determine if a person is "by reason of a mental disorder, in imminent likelihood of harming himself or others, or gravely disabled and unable to care for his basic needs.

Once a person is hospitalized the county prosecutor is required by law to hold a hearing before a Superior Court Judge, to determine if the person shall be detained for a further period of up to fourteen days. Additional hearings are held following the 14th, 90th, and 180th days of hospitalization, should they subsequently be ordered. Since our counties are two hours away, the county in which Western State is located manages our hearings. I drive to the hospital rather than arranging to transport the patient back to our area.

As I enter the hearing room the first thing that impresses me is the wall of steel barred windows opposite the door. The palatial grounds outside seem always warm, sunny and inviting – a stark contrast to the ubiquitous gas station green walls of the hospital. A long table dominates the room and chairs encircle it in two concentric rings. The windowed door has been painted to protect the proceedings from scrutiny (though the judge regularly admits as spectators the anxious first year nursing students from his alma mater up the highway).

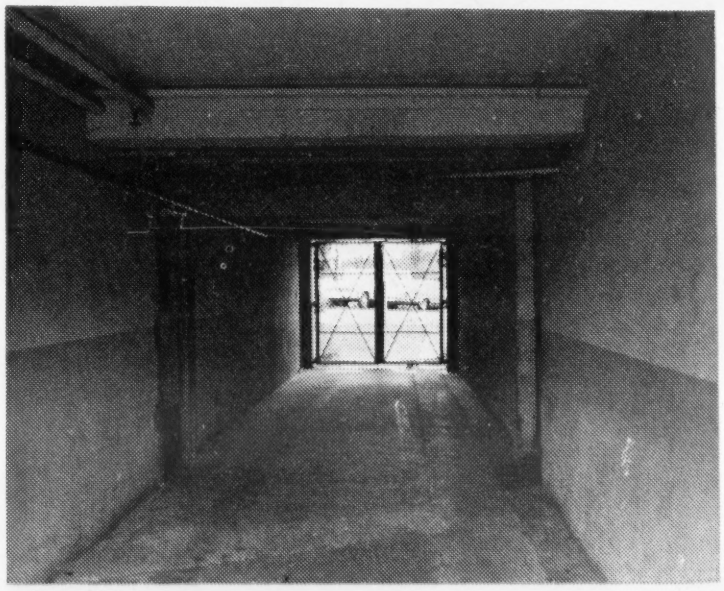
As the person detained enters the hearing room he confronts a room crowded with largely unfamiliar and expressionless faces. He may recognize me, his doctor, perhaps some ward staff and occasionally a relative or friend. In addition, around the table is the bearded judge who has a heart condition, the plump and cheerful court reporter, the tired and bitter court clerk overdue for retirement, the defense attorney appointed by the court, the Filipino psychiatrist in charge of the involuntary treatment ward, the red-faced Irish county prosecutor and a pair of frustrated hospital social workers who continually seek less restrictive alternatives for the involuntary patients. We've been through this ritual together often enough to share knowing glances after significant evidence has been presented – and to be expressionless much of the time. Outrageous delusional remarks by the detained person may bring a warm laugh from around the table but it quickly is stifled by our own embarrassed self-consciousness.

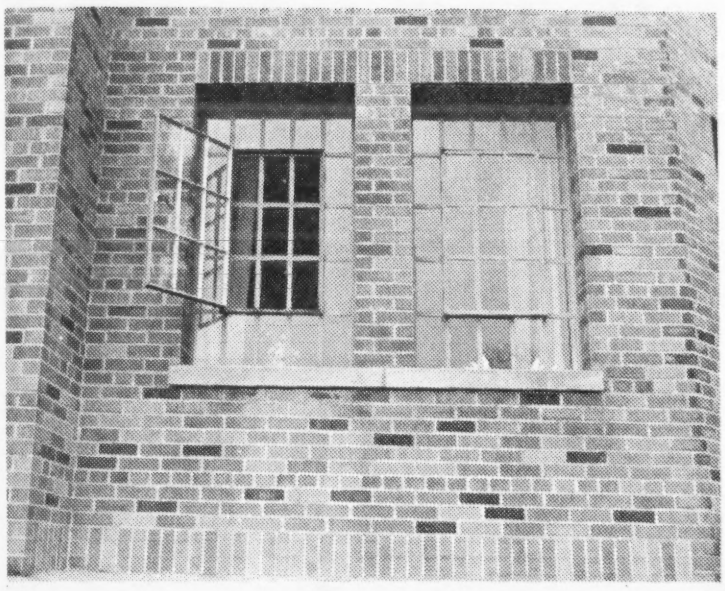
We all play our roles to perfection here. The lawyers try to win and we social workers try to help. The judge decides and the doctors diagnose. The detained person squirms, smokes, and waits.

I decide who goes to the hospital. The doctor validates my decision and professionally decides why the patient is there and should remain. The social workers support the doctors and report the lack of more humane resources appropriate for this person, while the lawyers argue whether the statute applies in this case, and 85-95% of the time the judge is convinced, "by a preponderance of the evidence."

Nearly a hundred people a month contact me about some friend, relative or neighbor who they think needs to be committed. Few appreciate the breadth of personal idiosyncrasy guaranteed by this law. Most callers are sincerely interested in the well being of the identified person and get irate when he is denied involuntary treatment because there is no threat to himself or others, or he is only disturbed when drunk.

Sharon L. is a fifty-year-old nurse who has been very paranoid for a number of years. Her nursing license was revoked after she was committed for the first time, and this action escalated her fearfulness to the point that she keeps her windows nailed shut and replaces the multiple padlocks on her doors at least weekly to prevent those "conspiring against her" from invading her home. She reports daily burglaries, peepers, attempted muggings and all manner of problems to police, doctors, judges, her numerous lawyers, her children's high school counselor, or anyone she dares to confide in that day. She rarely eats for fear of poisoning and takes no medication. She harasses her ex-husband's new wife and her children with wild fears but threatens no one nor herself. The fifth time the ex-husband calls to ask "Why the hell aren't you doing something about her? She's driving me crazy." I feel guilty, angry, and sad. In protecting her rights to be as "unique" as she wants, the law prevents Mrs. L. from receiving much-needed treatment, and





her husband from having peace, and me from having particularly good credibility.

The law also prevents the evaluation of anyone under the influence of alcohol. A drunken psychotic is "voluntarily mentally ill" according to statute and not without volition – though every legislator in Olympia has undoubtedly awakened some Sunday morning without a clue as to how he got home. Each county is mandated by the state to provide an alcohol commitment officer and detention program separate from the Mental Health Program. Our county doesn't have an officer or a program and the county commissioners never said why. Their droopy eyelids and lethargic pace during business meetings may hold the answer.

My Mormon predecessor had a reputation for committing nearly everyone he evaluated. He was well thought of by the various law enforcement agencies and doctors around the counties, as he relieved them of the obligation of meeting the scary and frightened human beings in a helping way. He protected these "pillars of the community" from their own fears of insanity by sweeping up the emotional "debris." My commitment rate is 40% lower by comparison and 25% more people are choosing to enter the hospital voluntarily since I took over. I'm proud of the change and of the better feelings in people's guts when I'm done being with them whatever the outcome. My credibility as an effective "vacuum" for the community is lousy, but I can sleep at night . . . when the phone doesn't ring.

September 1, 1977, 1:00 a.m. Tonight a woman has walked into the sheriff's office to report a man lying on the sidewalk in the rain. The deputies bring him in and it's an old friend – the bolt cutter from the millsite upriver. Tonight he's a Chinese Jew who is a General in the Lebanese CIA and he can sleep or not sleep and nobody knows any difference and he doesn't need to eat or drink because he has a poison capsule in case his plane crashes and you better realize right now he's God and on and on. Able's been out of the hospital for two months and decided he doesn't need his Stelazine any more cause he can read people's minds and his is better than any he's seen yet. Admission number eleven for the bolt cutter – he probably has pneumonia this time too, judging from his loose cough. I finish the papers citing grave disability (no eating, sleeping or providing shelter) and the deputy is reluctantly off on his three hour trip to the hospital. The bolt cutter has gotten used to the fleece-lined restraints. He helps himself into them with an almost audible sigh of relief. A soft bed and three meals a day await him.

My image of psychiatric social work as I entered graduate school back east had me promoting self-actualization among the downtrodden seven or eight hours a day from a comfortable office in a pleasant suburb of a cosmopolitan city. Commitment to a mental hospital brought to mind the Cuckoo's Nest image of drug-numbed vegetables.

One hundred hours per week I answer the phone, each time expecting another tormented soul's next 72 hours to be put in my hands. More realistically the rest of his/her life is under my influence, for if I choose to hospitalize the person, an indelible tattoo of "Deranged" is imprinted on his character, affecting his personal and public relationships beyond prediction.

This power to detain people by my signature alone intimidates me. At times I'd like to "send up" someone who is belligerent or annoying despite their sane mental condition. Other times I spend hours searching for a slightly promising alternative to the Haldol-clouded three-day stay at Steilacoom for the very young client or the client having an extreme reaction to a transient situational problem. I want more power to help and I want to be rid of what I have.

I resist the Angry Manipulator in me and become the Parent. I instruct. I nurture. I listen and nod empathically, or I firmly direct them and set limits when they can't for themselves. I try to help. When I'm angry I grind my teeth or yell inside my car as I drive home. Or curse the Robot Doctor or Macho Cop. And when I get home Kim massages the tension out of my neck and shoulders until I can sleep, and when the phone rings again my rationalization is ready. In our counties there is no other way to save psyches and lives. We have no hospital wards or even a psychiatrist for emergency medications. No other way to help the reservation woman who slashes her wrists with a broken bottle. No other way to help the retarded man who gets too angry for the nursing home to manage. No other way for the adolescent who was raped by his brother to keep from hanging himself. No other way. I am all there is for them.

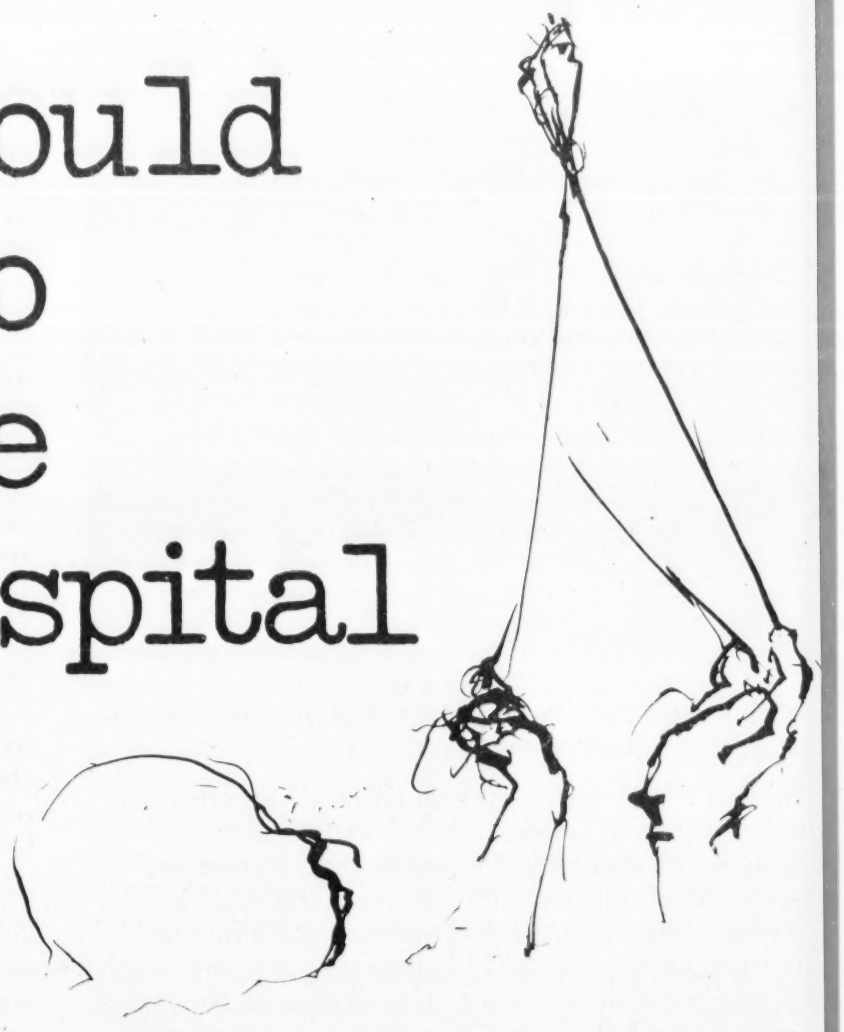
And who do I really protect when I lock these people away? Them? Their families? The police? Society-At-Large? The bed count at the state hospital? My job? My life? Your life?

And the sixth time I send the Viet Nam Vet up for attempting suicide who am I HELPING?

My paycheck is a cold thank you.

And how long will it be enough? Half of me longs for the oriental rugs and leather chair of the suburban psychotherapist's office and the nine to five caseload. And the other half cares too much . . . ■

Nobody Should Decide Who Goes to the Mental Hospital



DR. THOMAS SZASZ
TALKING WITH
GOV. JERRY BROWN AND DR. LOU SIMPSON

Governor Brown: Dr. Szasz, has your thinking evolved since you first wrote **The Myth of Mental Illness**, or do those concepts pretty much express your thoughts today?

Thomas Szasz: I certainly stand by what I wrote in **The Myth of Mental Illness**. But my views have also evolved, although that word doesn't quite convey what's happened, which is that I have become increasingly freer to say what I have thought for a long time. I am now secure enough, economically and professionally, that I no longer write for psychiatrists and mental health people. I write what I think. In my earlier books I was still making an attempt to establish myself and to appear as a respectable psychiatrist. Obviously I am not trying to do that any more.

Brown: You say that the effort to treat mentally ill people is nonsense?

Szasz: Yes, the way it's done today in the United States (and elsewhere too, of course) — by treating human conflicts, life problems, as if they were diseases, under governmental auspices,

Thomas Szasz (pronounced "Soz") at 58 is a much-awarded, much-published, much loved and despised critic of involuntary psychiatric treatment — indeed, critic of the whole medical model of psychiatry.

He is a practicing psychiatrist and professor of psychiatry at the State University of New York, Syracuse. Here's a stroll past his book titles, most of them still in print:

The Myth of Mental Illness (1961; 1974)
Law, Liberty and Psychiatry (1963)
Psychiatric Justice (1965)
The Ethics of Psychoanalysis (1965)
Ideology and Insanity (1970)
The Manufacture of Madness (1970)
The Second Sin (1973)
Ceremonial Chemistry (1974)
Heresies (1976)
Karl Kraus and the Soul Doctors (1976)
Schizophrenia: The Sacred Symbol of Psychiatry (1976)
The Theology of Medicine (1977)
Psychiatric Slavery (1977)
The Myth of Psychotherapy (1978; $8.95 from Anchor/Doubleday)

Dr. Szasz is a libertarian, quick to protect the rights of drug users, mental patients, and others he thinks are being pushed around by government, and equally quick not to protect individuals from their own responsibilities.

This conversation, which took place on a Sunday (March 12, 1978) at the Governor's Los Angeles home, was a rollicking occasion. Szasz brought people with him who were helping him get around to his various lectures in the state. Brown brought psychiatrist Lou Simpson (from the Central City Community Mental Health Clinic in Los Angeles and the State Medical Quality Control Board) along with other friends. The dialogue took off at a gallop and never slowed.

Noting this and other conversations with Milton Friedman, Herman Kahn, William F. Buckley, Jr., I am led to a conclusion. Intelligent conservatives are better company than intelligent liberals. Liberals talk about their cause. Conservatives talk about the world.

A word about the illustrations. The drawings on the first three pages are by June Leaf, a New York artist who since 1970 has been living in Nova Scotia with photographer Robert Frank. June shows in New York at the Terry Dintenfass Gallery. The remaining pages use drawings by Lowell Naeve from his fine, searing book **The Phantasies of a Prisoner** *(1958, Allan Swallow, Denver, Colorado).*

As usual, both Szasz and Brown had a look at the transcript. Brown made no substantial changes. Szasz expanded or revised a number of his remarks to make them more precise, less offhand.

—SB

and, to boot, often involuntarily, with some sort of overt or covert compulsion.

Brown: Well, the real question comes down to: people go to psychotherapists and they spend money and that is more or less voluntary. And that has to be distinguished from people who end up in our mental hospitals who are very disturbed, very dependent, very threatening.

Szasz: You are making the distinction that I believe is absolutely crucial for any sensible discussion of psychiatric matters. But as you know this distinction is not made in official psychiatric and political circles -- that is, the distinction between private and public psychiatry, between voluntary and contractual as against involuntary and institutional psychiatry. As a matter of fact, not only is such a distinction not made in official circles, it is emphatically denied. The mental health propagandists, psychiatric as well as political, talk incessantly about how people need "mental health care." Of course, the bulk of such care today, in this country, is not paid for by the clients themselves and most of it is assuredly not voluntary. Most of the patients are poor. Most of the payment is from some sort of "third party." Most of the "diseases" that are supposedly treated are things like unemployment or unemployability or some kind of personal behavior that's so unpleasant no one wants to put up with it. These are not the sorts of things for which people go to private psychotherapists.

Brown: The people who find their way into, for example, Metropolitan State Hospital are usually in a very dependent situation. They're often a danger to themselves, a danger to other people, and they're often suffering a great deal, so they end up there and then the state is asked to do something for them. In California we have a very strict law that puts people out on the street in 72 hours usually or in 14 days at the longest. Very few people are kept longer. So what is happening now is the same people are coming back over and over again to the state facilities because once they leave they stop taking medication, they get back into the same behavior patterns, and they're caught back in the system. What I'm trying to do is take your thoughts and critique of mental health establishments and apply that to what the state does, and I'm not sure that I can find any application. Do we close down the mental hospitals? What really is the course of action that your theory of human behavior would require?

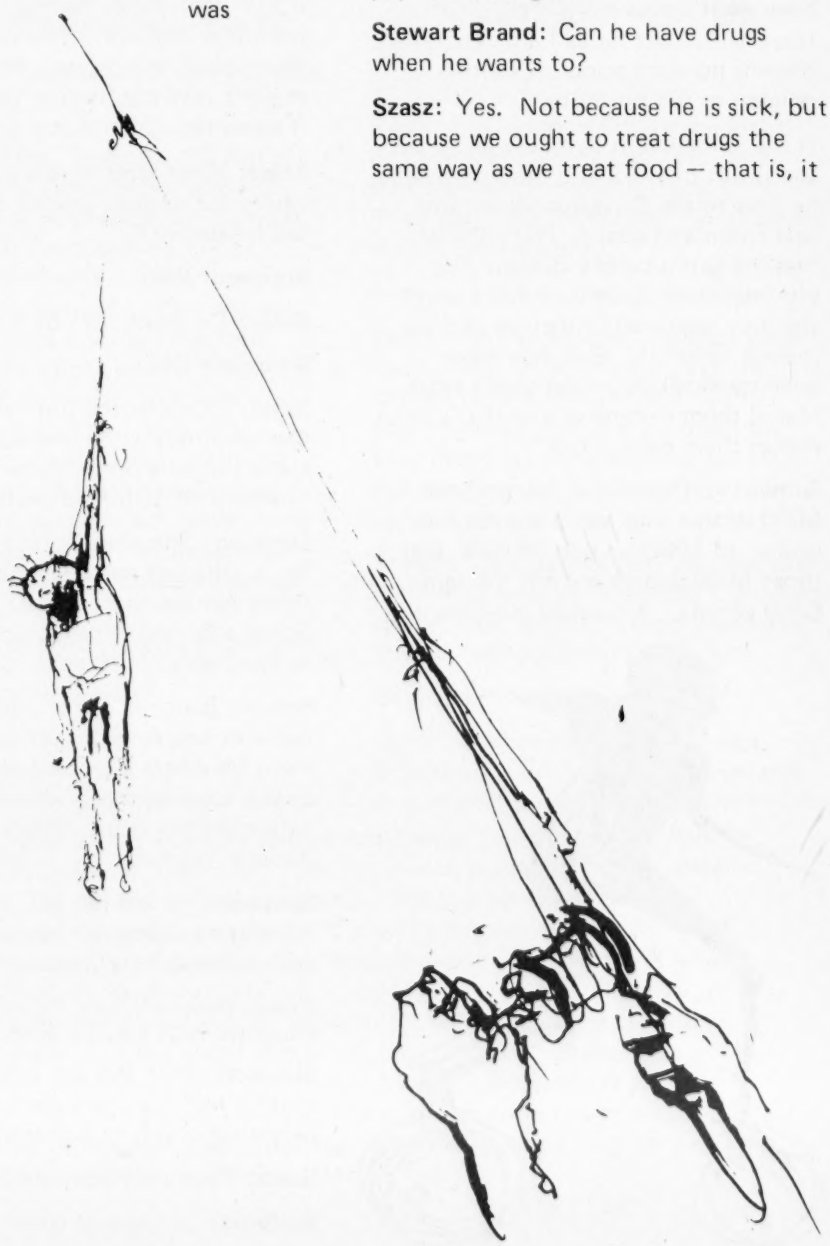
Szasz: At the Metropolitan State Hospital, or at any other state hospital, there are two categories or types of persons that are now lumped together. So long as they are lumped together, it's quite impossible to make any sense out of the situation or to discuss what might be done about it. First, there are people at such a hospital who more or less want to be there, who like to be there. Why? Because they have no better place to be at. They are poor, they are old, they don't have families, or they are rejected by their families, or something of that sort. Secondly, there are people at such hospitals who don't want to be there. They'd rather be anywhere else -- in their own homes, on the street, even in jail. In my view, this latter group of persons should simply be discharged. If a person has not broken the law, he has an inalienable right to liberty. So these people could, and should, simply be let out and allowed to shift for themselves, like everybody else. The former group presents a rather different problem.

Nevertheless, as you know, both of these groups are now dealt with pretty much the same way, that is, by what I would call "forcible discharge." Officially, it's called "dehospitalization." To me that's a new form of psychiatric brutality. Twenty years ago the standard psychiatric line was that, "The best thing for a mental patient is to put him in a mental hospital." Commitment was the treatment. The state mental hospital was to be the patient's home away from home. Now the process has been inverted -- that's how forcible eviction from the hospital has become a "treatment."

You see, I'm not for closing down the mental hospitals. At least not yet. I'm for opening them up, as asylums. But without doctors, without drugs. Because all that's nonsense. And without the use of any force. Because that's brutality. The question comes down to this: Could or would American society provide a half-way decent place -- just room and board -- for certain persons simply because they need it or want it? Could there be such places -- which people could enter, when they wanted to, and which they could leave, when they wanted to? It's my impression that the taxpayers wouldn't put up with such a thing, because it would be too nice. Such a place has to be concealed as a "hospital"; staying there has to be made unpleasant in a thousand ways of which the currently most fashionable one is poisoning by so-called anti-psychotic drugs.

Stewart Brand: Can he have drugs when he wants to?

Szasz: Yes. Not because he is sick, but because we ought to treat drugs the same way as we treat food -- that is, it



should be none of the government's business what sorts of substances people put into their bodies, or avoid putting into their bodies. Maybe we can come back to this later. This business of *so-called* drugs — for what's a drug, alcohol, tobacco, opium, valium, what's the difference? — might distract us from the point I was trying to make, which is that the only valid element in the state mental hospital is its asylum or hotel-keeping aspect. What I tried to describe is simply a humane system of giving people room and board (and perhaps some extras, like TV, books, etc.).

But I must enter a caveat here. There is something about this I don't like. As a libertarian, I don't like the idea that people should get all kinds of goodies for nothing, without working or paying for it. However, in principle — from a simple humane or civil libertarian point of view — I think people in such hypothetical "hotels" should have access to drugs — should have anything that, say, prisoners have: that is, books, bibles, priests, rabbis, whatnot. Furthermore, — and this is the crux of the matter — nothing of this sort should be forced on them, for their own good. Certainly they shouldn't have what's now called "psychiatric treatment." As far as I am concerned, there is no such thing. It's either religion or it's brutality.

If it's 20 below in Syracuse and a person is out of work and has no money, he goes to the Salvation Army and gets room and board. If it's Christmas, he gets a turkey dinner. It's old-fashioned charity. I think that's the only legitimate function of state mental hospitals. But they have been medicalized — and that's what makes them expensive and that's what makes them destructive.

Brown: In California now we have 5000 people that are in mental hospitals. In 1960 we had 35,000. But those 5000 people are not the same 5000 people. It revolves every month or two, so we actually have about 30,000 people going in and out the door.

Szasz: To some extent this is political-psychiatric double bookkeeping. In New York State, in Queens, on Long Island, there are broken down old hotels full of ex-mental patients. Those are mental hospitals, but they are not called mental hospitals. The whole history of modern psychiatry is a continuous process of renaming places and patients.

Brown: What happens to these people? They take drugs, they get their minds scrambled, they're having hallucinations, they become violent, what do we do with these people? We just let them run through the streets? What's the proposal?

Szasz: What I'm suggesting, basically, legally, is that people be treated pretty much the same regardless of their mental state. If you could give me some examples, then I think I could flesh this out, make it more concrete.

Brown: Lou, give us an example of patients that you have seen.

Lou Simpson: Laura, 50 years old, has been in and out of mental hospitals for 30 years. She is a manic depressive and I've seen her three times in six weeks. She leaves the hospital. She doesn't take her lithium because it slows her down, right?

Szasz: What kind of disease is that, where the patient doesn't take the treatment?

Simpson: Well . . .

Szasz: Do diabetics not take insulin?

Simpson: Okay.

Szasz: Or epileptics not take Dilantin? Mental illness is the one disease where many patients prefer to be "ill"; where "treatment" is forced on them.

Simpson: She doesn't take her lithium. So . . . the last episode is that she threw her daughter in jail. She told the police a lie, got very manicky. She goes to Sanchez's court and . . .

Brown: Sanchez is the committing judge in Los Angeles. That's Department 95 where if you're committed to the hospital that's where the writ of habeas corpus goes. That's where the decision is made.

Simpson: He lets her go. And within 10 days her daughter will call up, "Lou, she's done something else."

Szasz: Wait a minute. Go slow now. The daughter calls you up and says what?

Simpson: Well, the last time her mother had tried to organize the neighborhood into vigilantes . . .

Szasz: That's her constitutional right.

Simpson: . . . against some delusions, some very heavy delusions. People were after her supposedly, so she needed protection.

Szasz: But people obviously *are* after her.

Simpson: Okay. It's cute.

Szasz: But what is the problem? It seems to me that the daughter has a problem. How old is the daughter?

Simpson: Twenty-eight years old.

Szasz: Let me tell you what I would do. This 28-year-old daughter would call up and say, "Dr. Szasz, I have this problem, can you see my mother?" I say, "No, I can't see your mother but I'll be glad to see you." Let's assume that she would come. I would then ask her, "Why are you living with your mother?"

Simpson: She doesn't live with the mother.

Szasz: So what's the problem?

Simpson: The problem is that the daughter was at her own home one Sunday night and the police knocked on her door and took her down to jail because her mother had sworn that the daughter had drawn a gun on her. The daughter spends two nights in jail and it takes a $5000 bond to get her out.

Szasz: This is straight out of James Thurber's "A Unicorn in the Garden." You know that story? To my mind, this is the sort of thing that the Old Testament is about. People in the family bothering each other. This is a modern version of Abraham and Isaac. If you want to see it as a psychiatric problem, then we have to part company.

Brown: What happens with Abraham and Isaac?

Szasz: Abraham thought that in order to be a good man to please God, he should slice up Isaac. This would certainly qualify him now as a paranoid schizophrenic. It seems to me that this mother is not a problem to society. She is a problem to her daughter. The daughter has to deal with it. End of story.

Simpson: Well, there's a few other episodes. She's in the middle of the street directing traffic.

Szasz: All right. This whole category of acts I would deal with through the criminal law. When people act like this they are asking for attention. They want to make trouble. The only way to deal with it is by punishing them. Not savagely, not harshly, and preferably in such a way that they make some restitution. I would put this woman in jail and make her work off all the police costs that she has incurred.

Simpson: However, if she takes one little white pill three times a day, she's cleared for years.

Brand

Lou Simpson, Thomas Szasz, Jerry Brown

Szasz: But she doesn't take the pill. She has an ambition — to be psychotic.

Brown: It's a career, you're saying.

Szasz: It's obviously a career. Being crazy, especially chronically crazy, is a career. But even being sick can be a career. People who have arthritis, that's their career. In France it's their liver.

Simpson: There's no question that some mental illness is a career.

Szasz: There is no mental illness. You have not demonstrated that this woman you have described is anything but a troublesome human being. In what way is she ill? The fact that chemicals change her doesn't prove anything. Martinis change you too. It doesn't mean that before the martini you were ill. But this is the logic of modern psychiatry: You take somebody; you give them a drug; they act differently; therefore they were sick.

Brown: Before you have your three martini lunch you're crazy, and then you're sane?

Szasz: Yes. This is the logic of lithium. And of thorazine. Governor Brown, look how psychiatry and the pharmaceutical industry push drugs now. When I was your age, the scientific "answer" to the major mental illnesses, to the psychoses, was electric shock. And lobotomy. Egas Moniz, the Portuguese neurosurgeon who invented that "cure," even got the Nobel Prize for it. For curing schizophrenia! It's all a matter of therapeutic fashions. The history of psychiatry is full of these fake treatments — every twenty years there is a new one. You will see the day when the injuries caused by thorazine and lithium will be one of the major public health problems in this country. There will be tens of thousands of persons walking around poisoned by the major tranquilizers, having tardive dyskinesia.* How many psychiatrists, Dr. Simpson, do you know who would take thorazine?

Simpson: Who know what it does? Uh . . .

Szasz: You see my point?

Simpson: Well, you can't compare the doctor population . . .

Szasz: But, supposedly, psychiatrists become mentally ill too. Yet they don't get electric shock treatments. They don't get thorazine. Those things are for patients only.

Brown: What do they get?

Szasz: Psychotherapy. Or they commit suicide. Psychiatrists have the highest suicide rate in the country. But they don't go to state hospitals; they don't take thorazine or get electric shock or ask for lobotomies. It's really all to obvious.

Brown: Lou, you've said you feel that if some of your patients don't get medication they fall into a deep psychosis from which they don't come out.

Simpson: That happens often.

Szasz: The psychosis is their cure, Governor. Carl Jung said a psychosis

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For more information on tardive dyskinesia, check out "The Hidden Cost of Mind Medicines," Joy Horowitz,* **Human Behavior, *May 1978. The condition looks like this: "His gnarled hands are in constant, involuntary motion, as if playing octaves on a piano. And most distressing to watch are his facial movements: his tongue wags from side to side and slowly juts out of his mouth after he puffs up his cheeks and purses his lips together." The condition is hard to diagnose in its early stages and so far is untreatable. Sometimes it develops months or years after medication has stopped. It appears that 5 - 55% of patients on long-term phenothiazine treatment (Thorazine, Stelazine, etc.) develop tardive dyskinesia — some 50,000 new sufferers each year, and increasing.*

—SB

is not a disease, it's a cure. For us it's a problem; for them it's a solution. Freud said that religion is a psychosis. It's the other way around — psychosis is a religion. It's a religion we don't like. It's a minority religion. It's a religion which nobody else shares. If you can get other people to share it, then it becomes a movement.

Simpson: Well, if you have a problem with a person, shooting the person in the head could be a solution.

Szasz: You're damn right. Not *could* be. It *is* a solution.

Simpson: Well, that doesn't mean it's the appropriate solution.

Szasz: If you have a serious problem with somebody, or with yourself, there are two basic things you can do. Do something to the person illegally or go crazy. Murder is a very good solution. It just happens to be illegal. That's why it's such an excellent solution when you have enough political power. Idi Amin has no such problems. He shoots the people he doesn't like. If an ordinary person kills someone he may have to go to jail for life. That's a trade off. Or he can go crazy and take lithium.

Let me add something to this. We have not talked about the large category of people who are quite different from this manic depressive. We have not talked about a person who is so to speak, "privately" ill, like Ernest Hemingway. Ernest Hemingway was committed to the Mayo Clinic and was given electric shock treatment. Twice. Now what was wrong with Ernest Hemingway?

Simpson: I don't know.

Szasz: I don't know either. All I know is what I read. Ernest Hemingway was getting older, which he didn't like; he was getting impotent, which he probably didn't like; he was getting depressed — he was unhappy that he wasn't 35, that he was 60. Is that a disease? For that he should be committed? For that he should be treated? Involuntarily? This sort of "illness" affects a very large group of people.

Brown: Ezra Pound was committed too.

Szasz: How should you deal with these people? The answer is simple! Don't do anything. It's like asking, how do you deal with somebody who's a different religion from you? The answer is called tolerance. Let him be. He has money. He'll take care of himself. If he wants to destroy himself, that's his right.

Brown: Okay. You have a lot of people who are labeled as mentally ill. Many of these are poor people or if they weren't poor they became poor because they can't dress themselves, they don't look right, their behavior is bizarre, they're ending up at the bottom of the social ladder, and they sit in these run-down hotels, they get their SSI payments, $340 a month, and it all looks very depressing. So people in the mental health movement say, give them some therapy, teach them, create workshops, give them all sorts of vocational rehabilitative activity. Do you think that's good or bad?

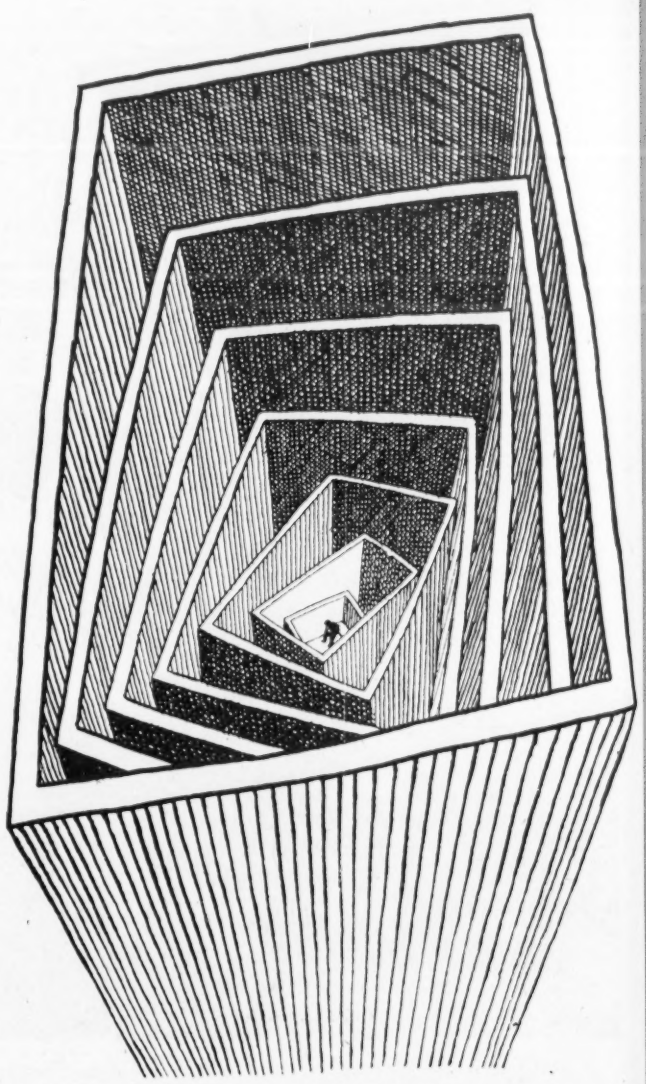
Szasz: I think the solution is the problem. As long as any part of this sort of thing is allowed to remain within the professions of medicine and mental health, there can be no solution; there can be no hope. It's got to be taken away from the psychiatrists.

Brown: Well, in some ways the movement toward community mental health is that you get away from the medical model. They keep talking about the social model. Normalization.

Szasz: That's what the psychiatrists have sold the public. I hope they haven't sold it to you. Actually, all they have done is move the stand where they do business. They still have the power. When I say take "it" — that is, "mental health care" — away from the profession, I mean some very simple things. Like not giving anybody with an M.D. or Ph.D. any government money to take care of so-called mentally sick people; no government money for mental "hospitals," for "drugs," for "therapy." So what institutions, what persons, should take care of such problems? Voluntary associations and the churches and the clergy. I would turn this whole business back to the ministers and priests and rabbis.

Brown: What would happen if we took away all the drugs? There must be tens of thousands of people who are existing in our society walking in the streets, living in motels, even in mental hospitals, only because they will take these tranquilizing drugs. And if you took away the tranquilizing drugs they'd be yelling and screaming and hitting people and throwing chairs through the windows, it would become pandemonium. Lou, is that a fair description? How many of those people sitting over at Metropolitan State Hospital if you said, "No more drugs," would be screaming, yelling, running around?

Simpson: Many of them would.



Brown: Many of them would. And then you have them confined in these small rooms that will become intolerable to the people who are there.

Simpson: That's a reality.

Brown: So what is your solution to that? Just open the doors and let them come and go?

Szasz: If you'll forgive me, Governor Brown, my answer to this question is that the phenomenon you have described simply doesn't exist. What you have described is not a problem, it's psychiatric propaganda. In Elizabethan England, in Shakespeare's time, there was no thorazine. There were no mental hospitals. Where were all these people then?

Brown: They used to chain mentally ill people.

Szasz: That was later. After the middle of the 17th century.

Brown: What'd they do with the mentally ill before that? Didn't they burn them as witches?

Szasz: In Elizabethan England they didn't burn them as witches. People just weren't identified as "mental patients."

Brown: By the way on this same topic, there is a federal court lawsuit against the state of California from using any involuntary medication. Are you aware of that?

Szasz: I am aware of that.

Simpson: I think it's a foolish law. Someone comes in very psychotic and we state that the person may not have insight or judgment, but you give them then the right to judge whether they need drugs or not.

Szasz: It's not foolish. It shows, Governor Brown, that if you start out with a big lie, it doesn't matter how many truths you add to it, the net result will be more lies. The ACLU is now saying that it's all right to commit somebody — he's too crazy to make a choice about whether to be in the hospital or not. Once he is in the hospital, he is evidently no longer so crazy, because the ACLU claims he should have a right to accept or reject drugs or treatment.

Simpson: Which is another paradox.

Szasz: You call it a paradox. I call it a lie. Or several lies.

Simpson: I call it crazy.

Brown: Okay. So what about the poor man or woman standing on the street corner who will get run over by a car because their mind is so clouded and confused?

Szasz: That's no problem, Governor. You need some nice person — some people who want to help others without coercing them — who can be summoned, perhaps by the police. This person will come and take this unfortunate by his arm and take him to a shelter.

Brown: And what happens if they keep walking away?

Szasz: You ask them not to do this sort of thing. You tell them it's a crime to wander in the streets aimlessly, to disturb the peace. Then, if they keep acting the same way, you charge them with the crime they have committed and you punish them, because, in that case, they are probably not confused but want to make trouble, want to attract attention. And maybe they do want to get killed. That raises the whole question of so-called "dangerousness to self." As you know — you are a lawyer — commitment laws have traditionally been premised on two things. I don't know why we didn't get to this sooner.

Brown: Danger to yourself or danger to others.

Szasz: Right. But first the so-called patient has to have a mental illness. Then, he is committable if the mental illness is of such a nature or severity that he is a danger to himself or others. Let's take those separately.

First, let's take dangerousness to others. Strictly speaking, there is no such thing. That category really doesn't exist, because, in America, everyone has a constitutional right to be dangerous to others: you have a right to be *dangerous* (whatever that means), you don't have a right to commit an *illegal act*. I don't have to tell you what a world of difference there is between those two concepts. If a person commits an illegal act — well, that's none of psychiatry's business; that's the business of the criminal law.

That leaves dangerousness to self. Let's say the person has what psychiatrists call anorexia nervosa. The patient doesn't eat. She wants to be a thin woman. Perhaps she doesn't want to be a woman at all. So what's the problem. As a rule, such persons don't ask for help. Why is this the psychiatrist's business?

Simpson: What happens if she starves herself, whereas she may be, through treatment . . .

Szasz: Here, psychiatry — our whole society — refuses to face up to a basic religious question: Does a person have the right to kill himself? Yes or no? The Jews have faced up to it. The Catholics have faced up to it.

Brown: They say you don't.

Szasz: Right! But what do we say? We are confused, we are inconsistent, we are hypocritical. In effect, American society says that you have a right to kill yourself because this is a secular society and every person is supposed to to be his own master; but you really don't have a right to kill yourself, because if you do, or try to, then you must be crazy and we'll punish you . . .

Brown: I think it's a misdemeanor to attempt to commit suicide. But suicide has traditionally been viewed as wrong. It's a mortal sin to commit suicide.

Szasz: But we no longer have a religious society. Suppose a good Catholic commits suicide tomorrow in Los Angeles or Syracuse. What ought to be his proper "punishment?" Not to be buried in consecrated ground. Does that happen? Not any more! The priest says: "He was crazy when he killed himself." How does the priest know that? You see, the insanity defense has infiltrated, like a cancer, even Christian theology and practice.

Brown: Why do you think the mental illness metaphor has taken on such power?

Szasz: Because it's a cop out for difficult moral questions. Psychiatry plays the same role here as in Russia. Why do the Russians love Communism, Solzhenitsyn notwithstanding? Because they don't have to make decisions. Because the state infantilizes them and takes care of them — regardless of how badly it does it. Dostoevsky said there is only one thing people love more than freedom, and that's slavery. Psychiatry gives it to them. Let me explain this a bit more.

As a rule, psychiatrists, institutional psychiatrists, don't really listen to their patients; they don't take them seriously , as human beings; in a sense, they don't take themselves seriously either. The psychiatrist and the psychotic are like ships passing in the night — they don't communicate. For example: What's a delusion? In my opinion, it's a metaphor. Someone says he is Jesus. What does that mean? It means that he is saying he wants to be important, respected. Now, how does the psychiatrist respond to that? What does he do? He talks in "delusions" too — that is, indirectly, in metaphor, in deception, in lies. He doesn't say: "I will control you." He says: "I will treat you." With a chemical, with an "antipsychotic" — which makes it sound similar to an antibiotic. But that's not called a delusion or a deception, because it is socially accepted and accredited "fact" that the forcible use of such chemicals constitutes "psychiatric treatment." In my opinion, what the patient does when he is "psychotic" and what the psychiatrist does when he "treats" are quite parallel, symmetrical operations. That's why the "major mental illnesses" and their treatments become such chronic situations. The patients keep coming back, or are brought back, because nothing is resolved; the psychiatrists keep "curing," because their cures are shams. The whole thing is like a bad marriage. Each party harps on the same complaints to the other, or about the other, for 25 years, for 50 years. These are very stable situations. They are much more stable than good, harmonious relationships. That's a tragic fact of life.

In my opinion, the mental health system is a double ripoff: it's exploited both by the patients and the psychiatrists. Patients exploit it for room and board and a career of sickness, and psychiatrists exploit it for money and a career of curing. It's like traditional marriage. One partner wants security, the other wants sex. Each wants something else. Each gets, and doesn't get, what they want — that's their satisfaction, and that's their frustration. But "bad" traditional marriages were much more stable than are "good" contemporary ones. There is an important lesson to be learned from that.

Brand: It looks to me as if this domain we call mental health is where we handle the blurry edges in society right now. If we abolish the present institutions doing that, which is an interesting idea, does that mean that the blurriness then disappears? Probably not. *[more →]*

Szasz: Yes it does.

Brand: I wonder.

Szasz: After the Middle Ages, as tolerance of religious differences increased, all the peculiar religious conflicts associated with the idea of heresy disappeared. Pretty soon it became impossible to have a career as a heretic, because no one paid attention to heresy. If you turn over the chess boards, you can't play chess. The only solution for the problems associated with the mental health system is to abolish the system. I like to compare this to slavery. If you want to get rid of the problems bred by slavery, then you have to abolish the institution of involuntary servitude.

Brown: What about brain damaged patients?

Szasz: That's no problem. In Britain, before they introduced the 1959 Mental Health Act and ruined the system they had, at least they used correct English words for mental hospitalization. They had three categories of mental patients — voluntary, involuntary, and what they called "non-protesting." A non-protesting patient is one that's so confused or so ambivalent — or perhaps catatonic, because he wants to act that way — that he cannot agree or consent to being hospitalized. But neither does he object or protest. Someone takes him by the arm, takes him to the hospital, and he doesn't do anything. How do you take care of a person with a stroke? In a diabetic coma?

Brown: You take care of them.

Szasz: Exactly. You take care of them. You don't need commitment laws for them.

Brown: What about the person in a catatonic state?

Szasz: You take care of him until he protests. Unless a person *acts*, he is not a moral agent. When the patient protests, then he becomes a moral agent. This is really quite simple, if you look at it coolly, without the usual psychiatric preconceptions. The concept or category of non-protesting patients is very important, especially for lower class patients. There are countless helpless people in poor shape who could be taken care of very well as non-protesting patients, at least for a while — especially if the care they got were decent. Then, if they protested, they could be released. That would cut through a lot of our civil rights problems in psychiatry.

Brown: How do they get into the treatment?

Szasz: The police could pick them up. Relatives or friends could bring them to doctors or hospitals.

Brown: Then what happens?

Szasz: What happens, or what *should* happen?

Brown: What should happen?

Szasz: They should be taken to a place appropriate to their needs. If there is reason to believe that they are sick, medically sick, then they should be taken to a hospital. Otherwise, they should be taken to some place where they have room and board and are not a nuisance to society.

Brown: And you want them then put in mental hospitals?

Szasz: No, no. They are put in a governmentally operated Holiday Inn.

Brown: And they can leave whenever they want.

Szasz: Of course. If they couldn't leave, they would be in prison. Most of them wouldn't leave. Governor, I am telling you, if you did something like this, the problem would be not that people would be leaving such free "Holiday Inns," but that they would be flocking to them. You couldn't get them out. You would have a problem on your hands from the "normal" citizens who would be footing the bill. They would say: "My God, why are all these people taken care of by the government? They are not criminals — if they were, they'd be in prison. They are not ill — if they were, they'd be in a hospital. So they must be loafers. Why should we support them — and in such style, to boot?" They'd say *that* even if it cost only $10 or $20 a day, instead of the $200 or more a day it now costs to support so-called patients in mental hospitals. (The cost to the taxpayer of supporting a patient in the New York State mental hospital system is now $70,000 per year.)

Brown: And the courts are saying that's not enough. The courts are mandating more and more treatment.

Szasz: This is going to kill the system.

Brand: That's what you want, right?

Szasz: It's going to bankrupt the system. It's an intellectual hemorrhage, too.

Brand: You must be glad of that, if it's going to kill the system.

Szasz: Yes and no. No, because in going down, psychiatry will bring the country down with it. Like a parasite killing its host. The expenditure on health in this country is already greater than the expenditure on defense. It's greater than that of any other branch of the government. At the same time, people are more unhappy with doctors than ever before in the modern world.

Brown: Do you agree with Ivan Illich's thoughts in **Medical Nemesis**? Do you feel some kinship to this thinking?

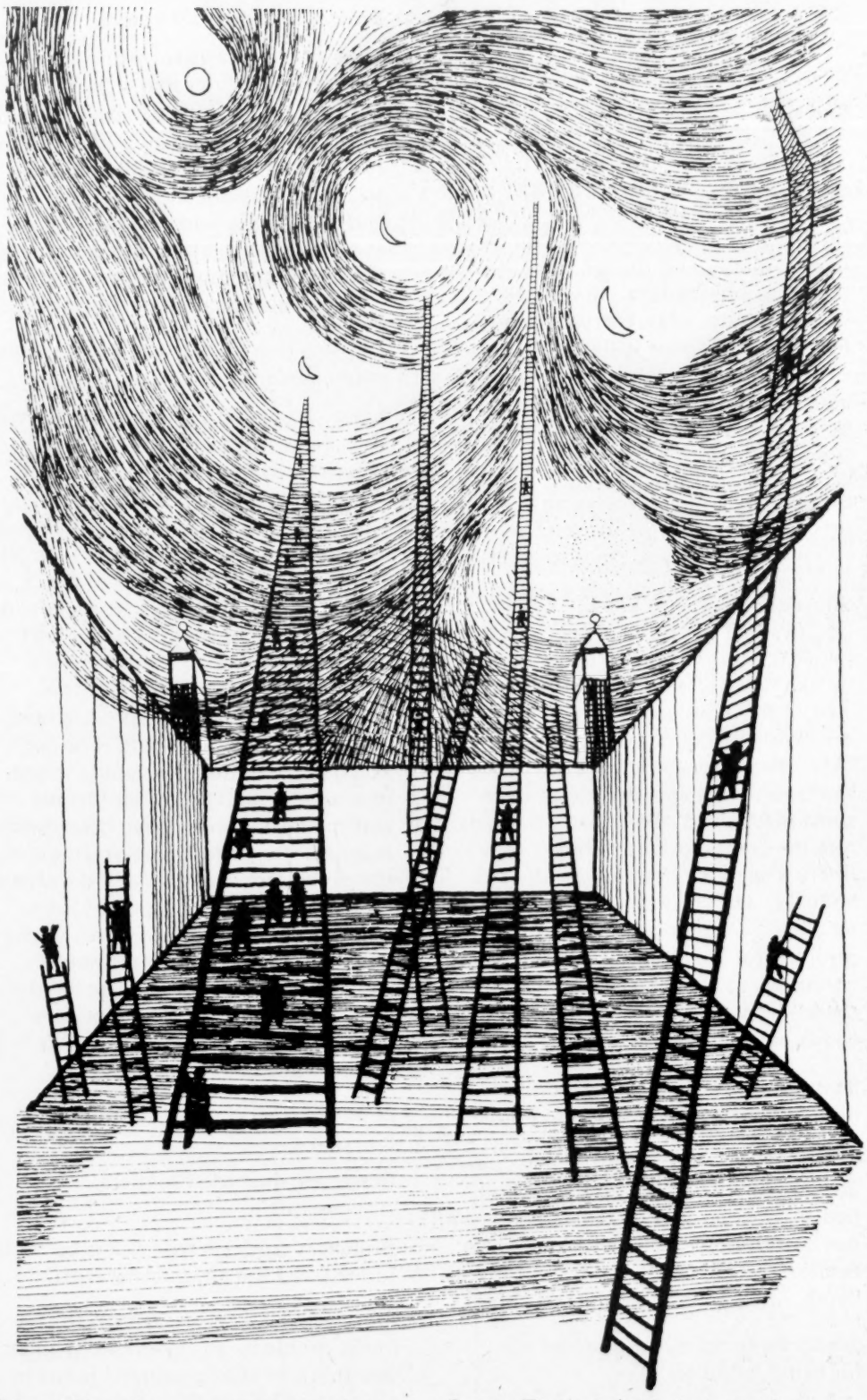
Szasz: In large part, yes. I agree with Illich about the dangers and the abuses of medical power. But there are several things in his work I don't like, I don't agree with. I don't like it that he doesn't make a sharper distinction between privately initiated and supported medical interventions and those that are initiated and paid for by the government. He also doesn't distinguish clearly enough what is bad in medicine because it is coerced and what is bad because it is scientifically false or technologically stupid. He is too much of a Luddite for me. I'd rather live with antibiotics than without them. With modern surgery than without it. In my opinion our problem is not medicine, as such, but the alliance between medicine and the state. I much prefer Friedrich Hayek to Ivan Illich.

Brown: What is Hayek's theory?

Szasz: His theory is that when the government pays for medical care, which cannot be clearly defined, then the demand for it will be limitless. When, at the same time, the government delegates a lot of power to the medical profession, then this is going to create several obvious problems. (Milton Friedman makes the same argument.) One problem will be that doctors will have too much power and will abuse it. Another will be that the "service" so provided will be too costly. It will tend to bankrupt the system and will have to be contained by non-market mechanisms, by means of legal and other controls. In the process, the true healing function of medicine will be destroyed. That's happening right under our eyes. The doctor is becoming more and more like a policeman, a priest, a social garbage collector.

Brown: When I was at the Metropolitan Hospital I talked to the people at the admission ward. They said that the rate of return was something of the order of 40%. What does that indicate?

Szasz: It indicates what I have been saying for 25 years. Mental illness is primarily a problem of housing. If you have a secure turf of your own, you cannot be mentally ill. Howard Hughes was more "psychotic" than all your patients put together, Dr. Simpson. For years, whenever his aides called him on the phone — long distance, from the other end of the country — they were instructed to turn off the television sets in their rooms. Why? Because Hughes was convinced that he'd get cancer from the radiation from the TV set coming through the telephone wires. This was just one of his minor eccentricities. But he had a turf of his own, and he took care of it. It's what you might think of as the Idi Amin syndrome. If you are powerful, you can make reality adapt to you. If you are powerless, you'd better adapt to reality — or else the psychiatrist will get you.



Brown: How does our system compare to France? Or Hungary?

Szasz: Hungary is now a communist country. I don't know much about what psychiatry is like there. France is a hell hole, psychiatrically speaking. It's easier to get committed there than here, conditions in the large hospitals are worse, it's harder to get out. The whole situation is bad. More like it was in the United States 30 or 40 years ago. England is better. Switzerland is perhaps better still. But they all believe in commitment.

Brown: What do you think of the patient advocates that we put in the hospitals?

Szasz: Waste of money.

Brown: Patient advocates are there to protect the patient against the doctor.

Szasz: They can't be, because they are a part of the same system.

Brown: But to have them there opens the system up.

Szasz: No. It legitimizes the system.

Brown: Not if they report to a different agency.

Szasz: That's a sham. They can't report to a different agency, because the agency that's controlling the whole thing is the courts, is the state itself — and the courts and the legislators are imbued with the psychiatric ideology.

Brown: But the courts are letting people out more and more. I looked into the figures myself. Last year in February there were about 30 writs of habeas corpus granted. In October it had risen to 132, and I would bet that it's probably rising since then at the same rate. In other words, if people are taken from Metropolitan Hospital, put on a bus, taken downtown to a court, the judge is letting them out, because he says that at that moment they are not a danger to themselves or a danger to others, so they go out the door. And then a lot of them come back.

Szasz: Right. I am not sure what point you are making. I suppose there are some hopeful signs, here and there, but not really. What will be the effect of this policy of "dehospitalization?" I'll tell you: more power for psychiatry five years hence. It's predictable that if this policy continues to be implemented, and if there is no other significant change in the system — then the result will be a groundswell of resentment against the "mental patients" in the community. Then the pendulum will swing back, there will be a popular demand for more commitments, for more institutionalization, and we'll be back where we were.

Brand: Dr. Szasz, you've written that you believe in slow change. Presumably that means change that happens by increments. What increments would you go at first? And then which ones after that?

Szasz: Just off the top of my head, I would say the first priority should be the demedicalization of psychiatry, of psychotherapy, of the whole mental health business. It will be necessary to recast whole nonsense about mental illness into ordinary language; into ordinary — but, of course, very difficult and painful — problems of housing, of economics, of family relations.

Brown: Do you think we could run our mental hospitals without psychiatrists?

Szasz: Of course. You could run them much better.

Brown: That would certainly solve one of our problems. Psychiatrists are striking for higher pay now. They are saying they will not work in a hospital unless we pay them $50,000 a year.

Szasz: I would no more be a doctor in a state mental hospital than I would be a patient. They are concentration camps.

Brown: You should probably go out and look at them.

Szasz: I know what they are like. I have been to them — to get patients out.

Brown: So you get them out. Where do they go? They go down to an anonymous part of San Francisco or Oakland or L.A.

Szasz: I am sorry. I am not suggesting that you get all the patients out. You have got all these buildings. You want some practical advice from me? Keep the buildings. Keep the grounds.

Brown: Just throw open the doors.

[more ➔]

Szasz: Exactly! Then throw everybody out who works there and makes more than $8,000 a year, and replace them with unemployed housewives or teachers or retired persons. With people who'd be happy to work for $5,000, and who'd be nice to people.

Then you'd have to make it clear that anyone who commits a crime in a state mental hospital, staff or patient, would be prosecuted for the crime they have committed. Let me tell you a little story about this. Some psychiatrists in New York State are quite sympathetic with some of my views. During the last year, there were two instances when voluntary patients have set fires at a Syracuse state mental hospital. The hospital authorities went to the local D.A. and asked him to indict the patients for arson. They didn't get anywhere.

Brown: Because they have an insanity defense?

Szasz: Not exactly. It's much worse than that. Psychiatrists have convinced the courts that some people are crazy, so they should be committed. The courts conclude that if people are in mental hospitals, they must be crazy – so there is no need to prosecute, to judge, to punish. The police, the D.A., the courts in effect tell the hospital psychiatrist: "Look, you take care of the problem. Obviously, the man is *sick*, otherwise he wouldn't be in your hospital. You do something. Give him more thorazine." We have created a monster. There are now two classes of human beings in America – the mentally healthy and the mentally sick. Until we start cutting into this, the problem will remain a vicious cycle.

Brown: Right now if we don't hire enough psychiatrists then the federal government will decertify our hospitals and we lose our accreditation and lose our federal money.

Szasz: So – the economic tail is wagging the psychiatric dog. Psychiatry is a colossal fraud, from the ground up.

Brown: What do you think of the role of private psychotherapy at $50 an hour?

Szasz: It's the secular equivalent of the confessional.

Unidentified female: You're saying it's not valid because of that?

Szasz: I'm saying it's valid because of that! I'm a great believer in religion. I don't believe in any particular religion, but I think religion is what makes the world go around.

Brown: Do you have a private practice?

Szasz: Yes.

Brown: So people come to you for $50 an hour?

Szasz: I charge $75. I see no problem with that. How much does a lawyer charge? $100, $150. The service he provides is also basically conversation. It's all a question of what sort of conversation and with whom. How much does a good investment counselor charge? $500. For what? To tell you how to hide your money in Switzerland. What are *we* doing? We are having a conversation. If you take the economics out of it, every Freudian here in Los Angeles will agree, privately of course, that psychoanalysis is conversation. What else could it possibly be? But that's not for Blue Cross. For Blue Cross it's treatment.

Brown: Okay, Lou, you're on the firing line there in the mental health system. How do you react to all this?

Simpson: Well, you know, I can incorporate some of his ideas. For some patients I think the best thing would be like farms, places they could go an stay. I think we could stop many of the revolving doors, with places like that. That's for *some* patients. For the chronic patients that don't have some place to go, the poverty patients, hire the grandmothers. There's definitely a need for that, no question about it. But for the young patient who has a breakdown, I think it's arrogant for me to say, "Hey, I'm not gonna treat you." Because in fact there's a good possibility that could be his only breakdown.

Szasz: I didn't say you shouldn't treat him if he wants to be treated. I hope that's clear.

Simpson: What would you do if you had an 18-year-old kid come in and he's had a breakdown, he's delusional, he's catatonic, just staring and he's slowly dying, not eating, not doing anything?

Szasz: He is not dying. Excuse me for being impolite.

Brown: What is happening?

Szasz: He is committing suicide. He is doing what the monks used to do in the desert – when the starved themselves or allowed themselves to be killed by wild animals.

Brown: Did some starve to death? I never read about that.

Szasz: In a sense they killed themselves. They mortified the flesh. They sought death. They wanted to leave this sinful earthly life behind them. A great deal of psychiatry is really a secular rewriting of religious experiences, of religious history.

The young man Dr. Simpson cites doesn't know what to do with his life. Who does? Perhaps he has a girlfriend who doesn't like him, who rejects him. I had a patient like this a few weeks ago.

Brown: So what did you do?

Szasz: I am a modest man. Really. But I must tell you that I "cured" him in three sessions. How? By talking to him straight, like we are talking. I tried to demystify what his "illness" was. I asked him: "Why didn't you tell X such and such?" He said he couldn't and explained why. Then we went on from that. And so on. I don't want to mention specific, identifying facts.

Brown: That's easy, that's just a little mild neurosis.

Szasz: Not at all. This young man had been hospitalized for several months before he came to see me. His "case" had been considered a psychiatric emergency. Everyone thought he was so depressed that he might kill himself. He himself was afraid of it. I don't want to mention more specific details. Let me say only that it was the sort of situation in which the psychiatrists involved were themselves not free agents. They had to hospitalize him, because if they hadn't and if he had killed himself, then the family might have sued them for a small fortune and they would have been dead ducks in court. So, in that sort of situation, the psychiatrists can't really do what's right for the patient, humanly, existentially. The psychiatrists are looking in the rearview mirror, as it were, watching for the cops – meaning the law, the malpractice law. They are not looking at the human being in front of them.

Simpson: But if they didn't lock him up . . .

Szasz: He might kill himself. Anyone might.

Brown: You think that risk is better to run than all the psychiatrist stuff.

Szasz: That's a religious problem. A moral problem. In my opinion, unless you think of killing yourself between the ages of 15 and 25, you're not a real human being.

Simpson: Okay, but if there wasn't an agent that says, "Hey, well maybe this kid's going through a depression . . ."

Szasz: I am all in favor of helping such a person, provided everything that's done is on the up-and-up, is completely non-coercive, completely voluntary.

Simpson: Well, what if he was stopping by and says, "By the way Doc I'm going to kill myself," and walks out. And the doctor says, "Hold it, you've gotta stay."

Szasz: I think such a doctor is a criminal. He should be indicted for false imprisonment, for kidnapping. And the patient ought to sue him, and if he does, I am glad to testify for him. Such a doctor ought to pay $5 million

in damages, because he is a one-man Gestapo.

Brown: You think someone who wanted to commit suicide and was prevented by a doctor through drugs could sue for wrongful saving of his life?

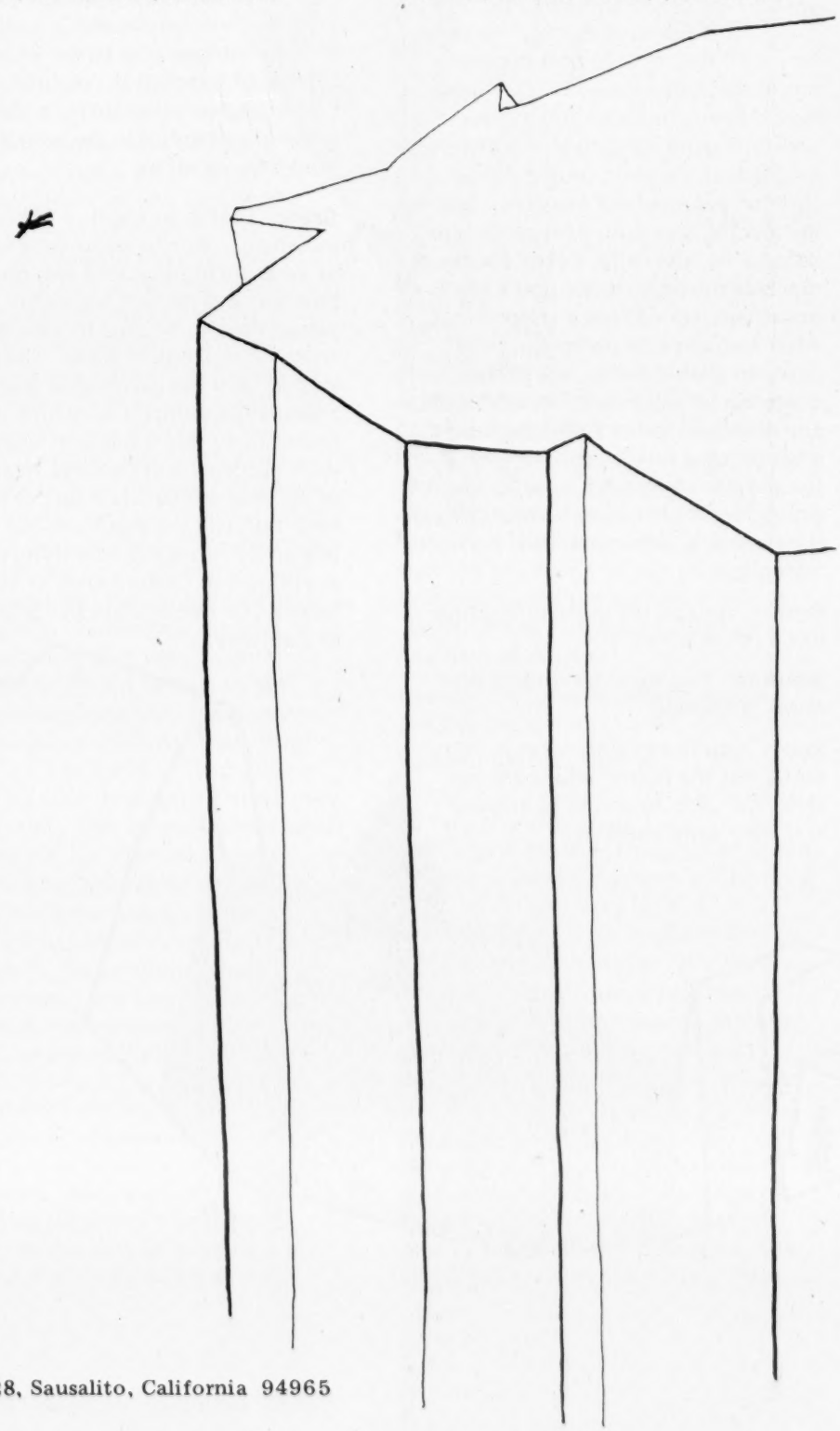
Szasz: Not only could he sue, he often does sue. He might feel that he wouldn't have killed himself anyway. That he was confined unnecessarily, unfairly. Such suits are becoming more common. That's why psychiatric malpractice rates are going up.

Brown: No, I'm making another point. If somebody wanted to commit suicide, and because he was forced by a psychiatrist to take certain drugs he lost his nerve and he didn't want to commit suicide any more, then he might sue the doctor for wrongful prevention.

Szasz: That's an excellent point, but I doubt that he could convince a jury that he deserves damages for that. But he could probably sue for wrongful detention, for false imprisonment.

Simpson: Let's say some amines — the amine level in his blood goes down — the person becomes very depressed, doesn't know why he's depressed. You give him antidepressants, he feels better and he starts functioning. Whereas if he wasn't given anything he might have reached the point where he wanted to kill himself.

Szasz: I assume Dr. Simpson is bringing this up to justify "treating" this man involuntarily. To justify putting something into his body so his amines come back up. It's wrong, all wrong. Let me show you why. Let's assume that this man doesn't have some hypothetical illness, that he has a real illness — diabetes mellitus. If he doesn't take his insulin, his blood sugar goes up, he goes into ketosis — diabetic acidosis. Let's assume, further, that he doesn't know this. All right? It's a good parallel. What's your obligation, as a doctor or friend? To tell him: "Look, Joe, you got diabetes, you're getting sick, out of control. If you took insulin, you'd be better, your illness would be controlled." Is that your obligation? Or is it to lock him up in a building and inject him with insulin whether he likes it or not?



Brown: What if he can't communicate?

Szasz: In that case there is no problem. Then he is not protesting. We have dealt with that already. Suppose that I have a coronary right here, from talking too much. I pass out. There is no legal problem about treating me. You get me to a hospital. They put me in an intensive care unit. They treat me. Suppose I then come to and say: "I feel okay, I want to fly home." Can I get out?

Brown: I don't know.

Szasz: You're damn right I can. Just like this! Unless they bring a psychiatrist to declare me incompetent . . .

Simpson: That's right. They'd probably bring a psychiatrist.

Szasz: All of medicine will be destroyed in America if people don't watch out for this sort of creeping therapeutic coercion.

Brown: Why?

Szasz: Because decent, dignified medicine rests on the moral and legal premise that people have a right to reject treatment. In medicine, the patient has a right to refuse treatment for the most obvious things, even when treatment is very safe and very effective. But in psychiatry, where there is no real treatment at all — where what's called treatment is dangerous and damaging — they can give it to you involuntarily. If you have syphilis, you can refuse penicillin. But if you have schizophrenia, you cannot refuse thorazine. In the one area in which there is no real illness, and no real treatment, both the diagnosis and the treatment are compulsory. It's ironic, to say the least.

Now I have answered your question about amines. Why not tell this man: "You have got low amines, let me give you such and such to raise them?" Then suppose he says: "No, thank you. I don't want it. I feel just fine the way I am." What would you do then? How would you answer that?

Simpson: Well, if he didn't want it and he was not suicidal, of course you couldn't commit him. There's no question about your example. A person has a choice to go in diabetic coma and die. That's his choice.

Brown: But that wouldn't be allowed in a hospital, would it?

Simpson: They would call a psychiatrist, the psychiatrist would . . .

Brown: Would give the order? Because they'd be afraid they'd be sued for malpractice? *[more ➔]*

Simpson: Sure.

Szasz: That points up the differences between being sick at home and in a hospital. Being at home is like living in America, being in a hospital is like living in Russia. If you want to be free, if you want to retain your autonomy, you've got to stay out of hospitals, I'm afraid it's as bad as that. That's why so many people are butchered when they die in hospitals. People complain how terrible it is to die in hospitals. Naturally. All your rights are taken away from you. People should have thought of that when they delegated so much power to doctors!

Brand: Is your central idea in all of this pretty much the notion of moral agency?

Szasz: Absolutely. That's the alpha and omega of my whole thinking about illness and medical care and psychiatric care.

Brand: Can you define that a little bit?

Szasz: I believe a person, every person, is a moral agent. That comes before everything else. Individual self-determination is, in my view, more important than health, than medical care, than psychiatric treatment. But suppose somebody says: "No, it's the other way around. Health is more important than liberty or dignity or autonomy." I don't agree with him. But I respect him. This is a moral or religious disagreement. It's not a scientific debate. You can't demonstrate to someone that freedom is more important than health or vice versa. It's more like arguing whether it's better to be a Catholic or a Jew. I think each person's position should be respected, and neither should have the right to impose his view on others.

Brand: How about children? What are your thoughts about at what point a young person becomes a moral agent?

Szasz: There is a progression from childhood to adulthood. It begins with a few weeks' old baby's spitting the food into his mother's or father's face when it's being fed. That's one of the first expressions of autonomy.

Brand: Can parents commit children to medical care, then, or to psychiatric treatment?

Szasz: That question is hard for me to answer because I don't recognize the existence of psychiatric treatment. I recognize only that people called psychiatrists do certain things for or to other people called patients.

Brand: We're talking about voluntary behavior by moral agents. Parents are moral agents; children aren't quite yet?

Szasz: Right. Children are partial moral agents. They are certainly moral agents of some sort. Of just what sort depends on their age and other circumstances. Growing up is, for better or worse, a process of acculturation. You become, more or less, what you parents want you to be, what your teachers, your peers, your culture want you to be.

Brand: It seems that increasingly children become what their parents don't want them to be.

Szasz: But, you know, if a child does the opposite of what his parents want him to do, that shows that he is still very much under their influence.

Brand: Granted. We're talking about whether there might be a shift going on. Are kids maybe moral agents at 12 now where they used to be at 16? Or is it the other direction? Herman Kahn makes the case that kids now never stop being kids.

Szasz: One of the thinkers I admire the most is Edmund Burke. He knew very well that one doesn't become a moral agent in a vacuum. One must have training in becoming a moral agent. Having training in moral agency means that the child must have good parents, parents who exercise respectful control over him, who guide him because he, the child, doesn't know as much as the parents do. Let's say a smart ten-year old has a strep throat. After two days on penicillin, he is likely to say: "Mother, my throat doesn't hurt any more. I don't need any more penicillin." So, the mother must explain why he should take it for another eight days, how he might get nephritis or rheumatic heart disease if he doesn't. She must insist on his taking it.

Brown: And so the mother is acting like a psychiatrist.

Simpson: You must be reading my mind, Governor.

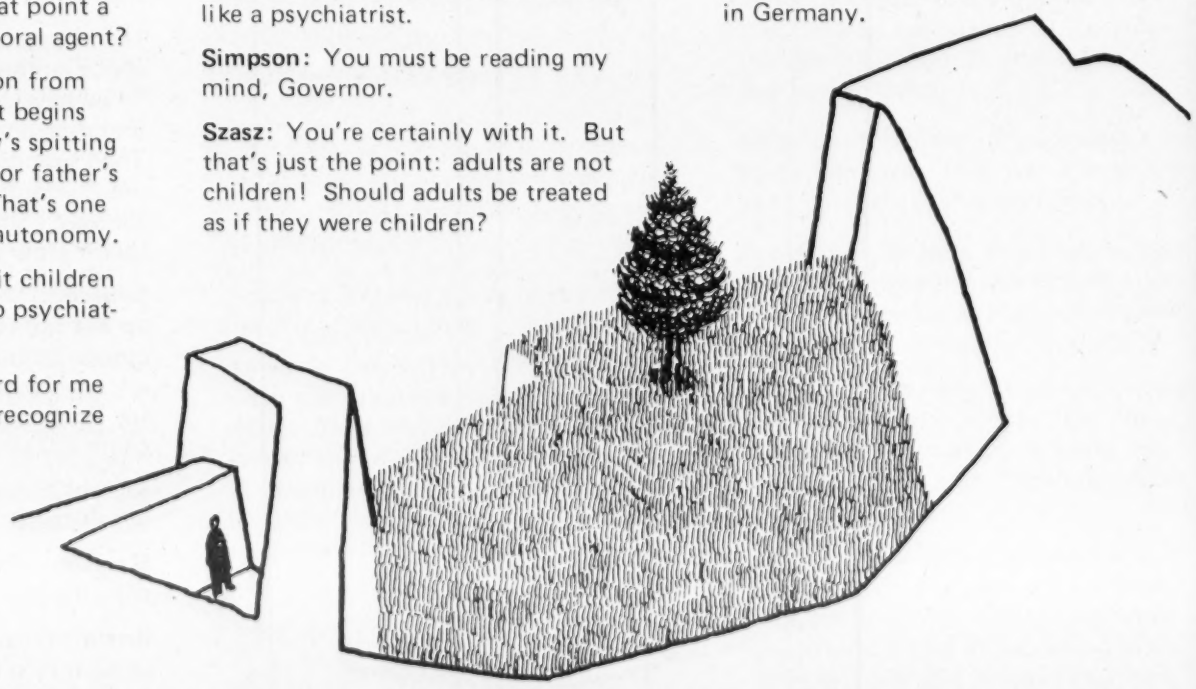
Szasz: You're certainly with it. But that's just the point: adults are not children! Should adults be treated as if they were children?

Brown: I think the argument would be that mentally ill people are like children because they don't understand.

Szasz: Yes. That's why I insist that psychiatry is *not* based on the medical model. It's based on the pediatric model. Psychiatrists treat adults as if they were children, as if they were not full-fledged moral agents.

Brown: All right. Let me ask you, have there been many societies where there's been so much deviance allowed? I don't believe that in former periods of history that so many different lifestyles were permitted as we do today. I don't know, I'm just raising the question. Because if there's more tolerance of deviation in America in 1978, then what you object to in psychiatry may be a very small part of what's always happened in cultures — a strong effort to enforce uniformity. So in this country, where we allow a lot more diversity and nonuniformity, maybe one of the exceptions to that rule is the psychiatric intervention people. And maybe that's a rather modest intervention in the whole system of freedom if you look at other countries and other systems that don't allow anywhere near the kind of freedom that we allow.

Szasz: That is an absolutely brilliant statement. But to know how valid it is, or what its implications are, one would have to have perfect foresight. One would have to be able to look back from Anno Domini 3000. The question is: Are the psychiatric and therapeutic controls on which we increasingly rely a minimal interference with our legal and political freedoms or do they constitute a sort of hemorrhage that will exsanguinate our system? It's surely not a minimal thing if it's anything like Communism in 1918 in Russia. Or like Nazism in 1933 in Germany.

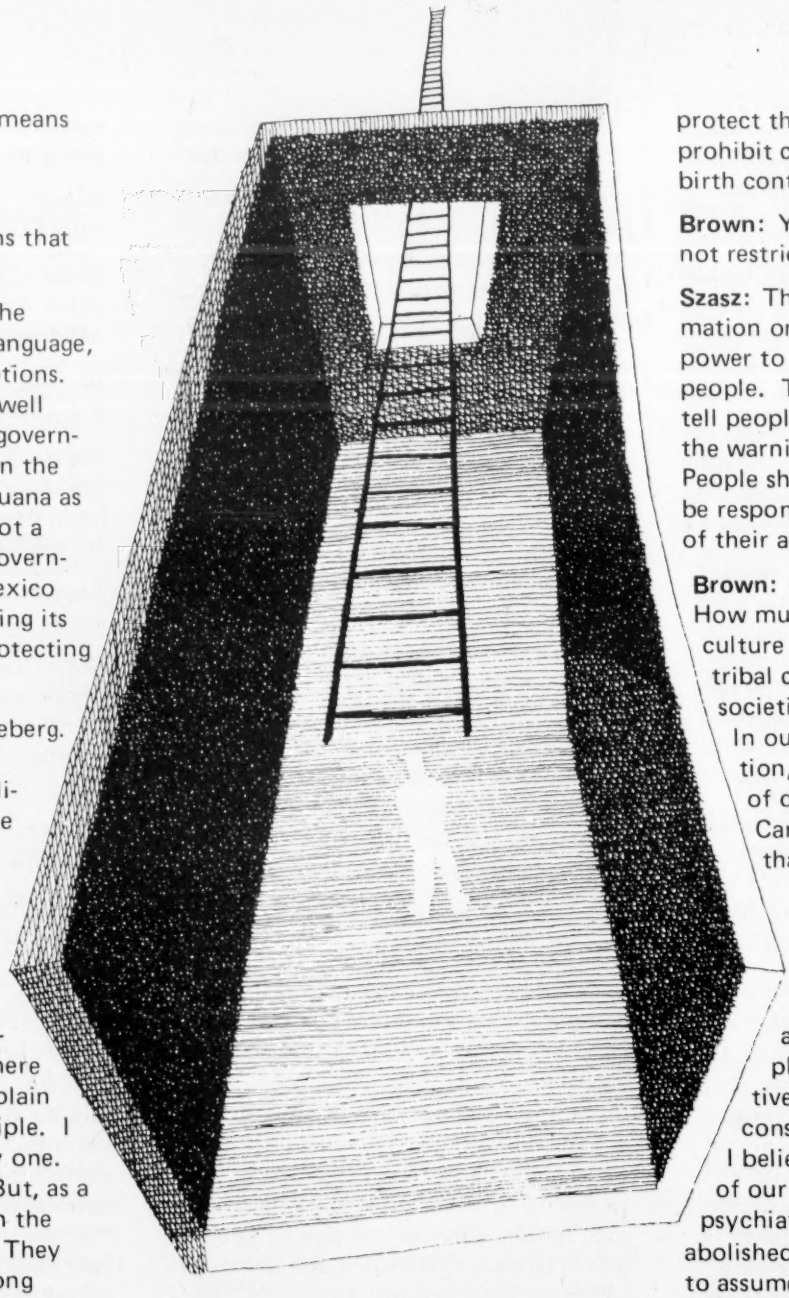


Brown: It might be a growing means of totalitarian control.

Szasz: That is my impression.

Brand: What would be the signs that that was the case?

Szasz: The major sign of it is the medical debauchment of our language, the creeping therapeutic deceptions. (This, by the way, is where Orwell was so perceptive.) I see it in government agencies like the FDA. In the government categorizing marijuana as a toxic drug, and nicotine as not a drug at all. In the American government spraying marijuana in Mexico with toxic chemicals — poisoning its own citizens in the guise of protecting them.



All this is just the tip of the iceberg. Below the surface lie colossal deceptions promoted by an alliance between medicine and the state — deceptions to which there is no thoughtful, organized opposition. The American Civil Liberties Union, for example, is in favor of commitment, of involuntary mental treatment, of psychiatric (and medical) controls. There are very few people who complain about these things — on principle. I don't mean that I am the only one. Obviously, there are others. But, as a rule, the people who complain the loudest, complain as victims. They complain stupidly, on the wrong grounds, in my opinion. They say: "Look what a terrible thing happened to me. I was locked up in a madhouse with all *those* crazy people." They complain that *they* were locked up, not that locking up innocent people is a moral wrong. Or they complain that they can't get Laetrile for their cancer. A lot of people now feel that, should they have cancer, they should be able to get laetrile. From their doctors, by prescription. But they've got it all wrong. They should be able to get Laetrile not because they have cancer, or because a doctor writes a prescription for it — but because they want it. Because it's their business whether they take it or not. The cancer victims who want Laetrile, for *themselves* see no connection between their desires for Laetrile, and other people's desires for amphetamines, or heroin, or God knows what. So everyone wants the drugs *he* wants, and very few people believe that everyone should have free access to whatever "drug" he wants.

You know the old saying that an injury done to the weakest member of society is an injury to every one of its members. People seem to have completely forgotten that maxim. Instead, people look at medical and therapeutic controls much as they looked at slavery, when slavery was an accepted social institution. It was not considered a threat to the whites because they considered it a good thing for the blacks. That's what's so dangerous, politically, about paternalism. People used to sincerely believe that the blacks are better off as slaves in Alabama than as savages in Africa. As Christians in America, than as heathens in Africa.

Brown: Did people believe that in the South?

Szasz: I am sure they did. I am convinced that Jefferson Davis was more sincere than Abraham Lincoln. Karl Menninger, perhaps the greatest apologist for psychiatric slavery in our time, is no doubt also very sincere. That was one of the great tragedies of slavery, of the Civil War. It's the great tragedy of institutional psychiatry. The most dangerous people, morally speaking, are those who sincerely believe that a particular falsehood is the truth, that evil is good. Hypocrites are less dangerous. You remember, Robespierre was called "the incorruptible." He was sincere all right. That's why I am worried that so many people in America now really believe that the FDA is there to protect them. That it's okay for it to prohibit cyclamates and promote birth control pills.

Brown: You think the FDA should not restrict drugs?

Szasz: The FDA should provide information only. It should not have any power to prohibit anything, to control people. The FDA should be able to tell people, "This is bad for you." Like the warning on cigarette packages. People should be informed and should be responsible for the consequences of their actions.

Brown: Okay. Let me ask you this. How much individuation can a culture sustain? If we look back at tribal culture, if we look at many societies, there is much greater unity. In our society we see fragmentation, we see increasing proliferation of different ideas and lifestyles. Can a society hold together with that kind of centrifugal force?

Szasz: Governor Brown, you have now brought up a huge subject. I am afraid to get started on it. It's very dear to my heart, and it's going to make me display my other face, my conservative face, which however is quite consistent with my libertarian face. I believe that if the psychiatrization of our society could be reversed, if psychiatric power could be reduced or abolished, then people would be forced to assume more responsibility for their lives. The result would be that there would be much less deviance than we now have. Less fragmentation of society, less atomization of the individual.

Brown: Why would there be much less deviance?

Szasz: Because the capriciousness of psychiatric controls permits deviance. It provokes deviance. Psychiatric controls are not only totalitarian, but, as is typical of totalitarian controls, they are capricious. They are not clearly articulated or defined, they are dishonest and illogical. So it's quite easy to evade them, to slip through the net they cast — as compared, let's say, to our income tax laws. If you are depressed and want to get out of a mental hospital, it's easy. All you have to do is act more cheerful. You tell the doctors that you feel better, that you are grateful for their help. Then you can go home and kill yourself. It's a system of brutal controls, but of controls that are stupid — and porous. I don't like to emphasize this in public lectures because it's easily misunderstood, but I'll say it here. Nobody in America is *really* locked up involuntarily. It's all a game. If you don't want to get locked up, you can prevent it. If you are locked up and want to get out, it's easy. *[more →]*

Brown: Besides writing your books, are you participating in these lawsuits that are being brought against mental hospitals?

Szasz: The only suits in which I like to participate in, forgive me Dr. Simpson, are suits where patients sue psychiatrists for damages. I like to think that such litigation has helped to discourage commitments. When a psychiatrist has to pay a huge judgment because he has locked up someone and gave him shock, because the patient has sued and has won — that's something psychiatrists hear about. The word gets around. That scares them.

Brown: Well, let's ask this question. Is the fact that we don't have enough psychiatrists hurting the people in Camarillo and Metropolitan?

Simpson: I think Camarillo and Metropolitan hurt the people. They are zoos. Huge non-treating entities.

Brown: So what should we do? Make it easier to get out? It is getting easier to get out.

Szasz: As you yourself said earlier, there is something way down the line that's economic. I'd add to that, that there is something else way down the line that's religious. I think we are all suffering, our society is suffering, from the simple fact that the government can give $70,000 per patient per year to psychiatrists to take care of somebody, but it can't give 7 cents to a religious organization — to do the same job and perhaps do it much better.

Brown: What do you mean?

Szasz: The First Amendment.

Brown: Separation of church and state.

Szasz: Which means that we have excluded a large caretaking body from taking care of people. We have stacked the cards *against* priests — and *for* physicians. If a helper does something called X for a suffering citizen, and if X is called religion, then it falls under the First Amendment. But if X is called therapy, then it does not, then the government can, and does, pay for it.

Brown: We still have charitable deductions, but even that is being cut back.

Brand: The governor tried to make it easier for some of the churches in California to get volunteer groups into dealing with various kinds of patients, and it's interesting who responded. The traditional church groups didn't respond very well, except in conversation. The ones who showed up at the institutions to help were Scientologists and Hare Krishnas. I'm not sure that with all the encouragement in the world the traditional churches would do the job these days.

Brown: What Dr. Szasz is saying is that if you don't have one institution and the problem remains, then another institution'll be created.

Dr. Szasz, you're saying though that really the way to end the problem of mental illness is for people to become more tolerant of deviant social behavior.

Szasz: Yes, I am saying that. But not only that. I am also saying that it's necessary for people to be more firmly controlling of other people. I believe that we have too many psychiatric controls, but not enough other controls.

Brown: You think there should be more control? By using the criminal system?

Szasz: Not only the criminal system. The controls we have neglected, downgraded the most, are what sociologists call "informal sanctions." If you don't like someone, you don't invite him to your house. If you don't like your wife, you don't have to kill her, or commit her, you can divorce her.

Brown: You think there's not enough divorce?

Szasz: There is not enough informal social control. As our society is becoming more and more statist, especially with respect to employment, informal controls or sanctions are steadily eliminated. Just look at the difference between the high school I went to in Budapest and an American high school now. In my day, if you didn't behave or perform, the principal called up your parents, and said: "Your son is out." No particular explanation. It was a privilege to go to school. You had to earn it. In America now, it's practically impossible to throw a kid out of school. If the principal tries it, he gets sued!

Brown: But that's a result of the whole pressure for individual rights — just what you're talking about.

Szasz: I wouldn't call that individual rights. I would call it individual irresponsibilities. If we don't change that, then we are finished. It's a burden that may be too heavy even for a society as strong and resilient as ours.

Brown: That is very hard to change. If you think the doctors are powerful, you ought to start looking at the lawyers. And the social activists. This is a major part of our employment.

Szasz: But Governor Brown, I was focusing on the impossibility of getting people out of jobs, of firing them. Increasingly, there is only one way to get somebody out of a job, and that is by declaring him mentally ill, mentally unfit. Calling people mentally ill has thus become a sort of safety valve. For an individual it's a safety valve to go crazy, rather than commit suicide or kill somebody. For society it's a safety valve to guarantee job security — if not in a real career then in a career of being mentally sick.

Brown: All right, if you take away the safety valve, then what happens?

Szasz: Then you replace it with a machine that works better so it doesn't need such a safety valve.

Brown: That cure may be worse than the disease.

Szasz: Suppose you have a car and the brake doesn't work. You're using the hand brake to make it stop. I'd say, fix the brake.

Brown: What does fixing the brake mean with respect to American society?

Szasz: Getting the government out of the private sector. Getting the government out of the business of providing people with jobs, with work, with a meaning for their life.

Simpson: You're assuming that private enterprise is so fair and so . . .

Szasz: No, no, no. Please don't accuse me of that.

Simpson: Sometimes government has to balance it out.

Szasz: I'm not talking about the government balancing anything. I am talking about the government assuming parental functions. Giving people jobs, something to do with their lives — like parents trying to make their children "happy." It doesn't have to do that. What made America great in the first place? That the state didn't infantilize the people. It *didn't* take care of them. Ironically, Marx may have been right about the state: When it "withers away," you're left with nothing but the "state!"

Brown: Nothing but the doctors.

Szasz: We're already deep into this process of homogenizing the roles of doctors, lawyers, and courts. Courts now determine who should get medical treatment. Whether psychiatrists can give and patients receive tranquilizers. Whether Laetrile cures cancer or not. The mind boggles.

Brown: Who should decide if the court doesn't?

Szasz: That's easy. Who should determine who should be a slave? Nobody. You see, at some point we've got to get away from this boundless moral relativism and adopt some moral absolutes. We have got to have some moral values and stand by them. Is X right or wrong? Nobody wants to come to grips with the morality of certain basic questions now often put to the courts. Instead, we technicalize everything. Laetrile is a good example. What difference does it make whether it works or not? The real question is: Do people have a right to Laetrile just as they have a right to holy water? If

the answer is yes, there is no issue for the courts. Slavery posed a similar problem. Was slavery morally legitimate? Is involuntary psychiatry? If the answer is No, there is nothing for the courts to decide. If the answer is Yes, slavery is okay for blacks, involuntary psychiatry is okay for crazy people — then, of course, we need experts, and courts, to decide whether someone is black enough to be a slave, whether someone is crazy enough to be involuntarily confined and treated.

Look at all the specific laws now passed to allow people to take Laetrile. Will there be a new state law for every new drug? How much of this idiocy can the country take? With one hand, we give power to the doctors, with the other hand we take it away.

Brand: That's interbureaucratic behavior. It's common. We get the same thing with nuclear energy — one part of the bureaucracy says it's good, another part says it's bad, and they fight it out. And that's usually done in our legal system through those individual and strange cases.

Brown: He's saying it's a contradiction. It's going in both directions at once.

Brand: At least it's dynamic.

Szasz: It's difficult to be sure, in advance, whether it's a socially useful dynamic, a balancing of countervailing forces, or whether it's a socially damaging bureaucratization, a moral hemorrhage. Was Prohibition a dynamic or a mistake? How many such mistakes can a person or a society afford? How many bad marriages can a person survive? I am sure there is a limit to how many costly social mistakes a country can afford.

Brown: Don't other countries have more laws than America banning things?

Szasz: I don't think so. Other countries aren't rich enough. They can't afford so many lawmakers and so many laws. Just look at a recent local case that illustrates this point. Roman Polanski. How much money did California taxpayers spend on him? First on prosecuting him. For what? For having intercourse with a good-looking 13-year-old girl. I understand that if he had waited two weeks, the act wouldn't have been a crime in California. It's not a crime in France. But that wasn't enough. Then he was psychiatrized. What were the psychiatrists looking for? Why he likes young girls? Or sex? Then, the piece de resistance: after prosecuting him and psychiatrizing him, letting him go, pack up, and fly off to France! I daresay my colleagues are the criminals in this case — looting the taxpayer by supposedly "studying" Polanski. I can just see the psychiatrists making jokes at cocktail parties, about how they would have loved to have been in his place.

I have no objection to corruption in politics (no offense meant), in business, even in literature or art. But in a so-called science — now, that's a different matter. Psychiatrists, in their official capacity, claiming that there is some sort of scientific explanation for why Polanski did whatever he did with a 13-year-old girl — that's corrupt.

Brown: Isn't one of the problems that people don't have an adequately defined role where they can be a part of something rather than just separated from something?

Szasz: Yes. You are right. What contributes to that? What causes it? I think — a lot of people who have thought about this think — that this is a manifestation, and a result, of the loss of informal organizations, of voluntary associations. That it's due to the growth of the state. Leviathan. The collectivist state creates atomized individuals. The isolated individual then, naturally, has no place, no group of which he can feel a part, except the place that's defined for him, assigned to him, by the state.

Brown: So all the subsidiary institutions are breaking down.

Szasz: Exactly. Except I wouldn't use such a passive verb. They are not just breaking down. They are being *destroyed* by the hegemonic state. And by the passion for human dependency. The state has destroyed religion. Now it is destroying the relationship between doctor and patient, between employer and employee, between parent and child.

Brown: You don't believe in nondiscrimination laws then?

Szasz: Of course not. Not in the private sector, which, ideally, should encompass virtually all jobs. It's an elementary right of the employer, that, in his office, he should be able to hire or fire anybody he wants.

Brown: That's fine if it's your office, but what if it's General Motors? That partakes of the same quality as the government itself.

Szasz: On that level, certainly it's a lot more complicated. Still, one must draw a line between private and public enterprise, between individual employers and governmental bodies. We can tell the difference between sweet water and salt water, though not in the estuary of a river.

Simpson: You say the state's breaking down religion, but to me religion is a state.

Szasz: In the United States today, the Catholic Church is quite separate from the state. It's not a state. In Italy 200 years ago, it was indeed indistinguishable from the state.

Simpson: I think it's a state, it owns property.

Szasz: Is the Rockefeller family a state? No. It's a powerful economic entity, but it's not a state.

Brown: But the real missing link is that not enough people have some identity that they can relate to. Neighborhood, family, church.

Szasz: We're back to the issue of moral agency.

Brown: It's pretty hard to be an individual if you're not part of a group. . . . Dr. Szasz, I have to go to my next appointment.

Szasz: It was a pleasure to talk to you. ■

Brand

BREAD & ROSES

—Not a Marginal Act

TALKING WITH
MIMI FARINA
AND LUCIE ALEXANDER AND DAN O'NEILL

Stewart Brand: What does Bread and Roses do?

Mimi Farina: It takes 30 live shows per month into institutions in Marin County. What shows go where are determined by auditions. We see if the performer will be appropriate for the institutions and will feel comfortable in the setting that we take them to. Some people are afraid of hospitals and not afraid of juvenile hall, and you don't know that until you ask. You might take a piano bar singer into an old folks' home because she or he will know all the melodies that the older people know.

Brand: The 30 a month is one every day or . . .?

Farina: It depends. We don't work on the weekends, so sometimes the two Events Coordinators have two shows in an afternoon. We work on an occasional weekend, like Delancey Street has Saturday events that we go to in the City, but we don't do many things in the City. Luckily for us there is a new project called Comity that can do for San Francisco what we do here.

Brand: Sticking strictly in Marin County is out of some principle?

Farina: It's out of the principle to stay small. One of the things that people in institutions lack most is a sense of trusting anybody — the guards, each other, the nurses, the administrators. So if there can be a sense of rapport and trust with one source on the outside, it's better than having no trust at all. We want to establish a friendship amongst patients and the staff and ourselves, and going back repeatedly is what establishes that friendship. First visit around maybe it went well and maybe they'll remember you, but if you never go back, so what?

Brand: How much are you going back now?

Farina: Monthly. Generally. It's something like 20 shows that we do definitely once a month and then the other 10 are off and on different places — experimenting with new ones, or some of the places close out, like when some of the Drug Rehabilitation Centers stopped being funded. There were a handful of places that we really liked going to that were closed down. So then we replaced them with — there are more convalescent homes in the county than anything else — so we'll probably replace them with convalescent homes.

Brand: What's the range of institutions?

Farina: There are supposedly 300 institutions in Marin. Mostly convalescent homes, drug rehabilitation centers,

Bread and Roses got national attention last October by putting on what many reporters called "the best festival of the last ten years." It was in Berkeley, outdoors at the Greek Theater. It was strictly acoustic ("the great neglected art form of the 70s," said **Rolling Stone***). With performers like Mimi Farina, her sister Joan Baez, Pete Seeger, Hoyt Axton, Arlo Guthrie, Buffy Sainte-Marie, Tom Paxton, Malvina Reynolds, Richie Havens, Ramblin' Jack Elliott, Theodor Bikel, Josh White, Jr., etc., it entertained the daylights out of 22,000 people over three days and netted $50,000 for Bread and Roses.*

It was a triumph of crisp, warm-hearted organization by Mimi and her staff, and it was a minor sideline to their real work of getting performers into institutions — hospitals, prisons, convalescent homes — for free. That's the burden of this interview, conducted over dinner at my house this March.

Bread and Roses has other sidelines. They've just prepared a pamphlet on how to organize a service like theirs, available for $.25 (for handling) from:

Bread and Roses
78 Throckmorton Ave.
Mill Valley, CA 94911

Also they're running twice-a-month seminars on how to organize benefit concerts, led by Rick Foster. This is really valuable, as far as I'm concerned, because most benefits are so poorly organized that they lose money and burn the artists badly enough that they refuse to do any further benefits. With well-organized events that whole trend could reverse. We put our Whole Earth Jamboree and R. Crumb Benefit staffs through the seminar, and I have to admit that after 15 years of public event organizing I learned a dozen things I didn't know.

The second Bread and Roses Festival of Music is scheduled for September 2, 3, 4, 1978, Labor Day weekend, again at the Greek Theater in Berkeley. That same month Mimi Farina's first solo album, "More Than a Charitable Act," should be out.

If all this puffery sounds like I'm on the Bread & Roses Board or something, that's understandable. I am, and honored to be. The interview took place before I was invited.

I should mention one element of the conversation that print leaves out and the reader may want to re-supply. Mimi is a comedienne, having done one year with the San Francisco improvisational group, The Committee, and she talks like it. Her discourse is mostly imagined or remembered dialogue, all of it spoken in the various characters, including parody of herself, the sensitive, vulnerable, innocent, earnest singer.

—SB

Daryl Sherman

Mimi Farina at Hillhaven Convalescent Home in Mill Valley, California: "What she was saying to me – she said it about ten times – was, 'You know what I'm gonna do when I get my social security check? I'm gonna go out and get a nice tall cold glass of BEER!' "

psychiatric day care centers, mental wards (some of them lock-up some of them not), and then we also go to Napa Mental Hospital once a month. And there's a new thing called Nutrition Sites. It's where they feed old people lunch and/or dinner, with a bus that'll take them to the site. We've been entertaining there – those are more like parties than situations where the old folks are stuck in their chairs. What else?

Lucie Alexander: Well, there're juvenile halls, a couple of big prisons – San Quentin, Vacaville. Is Vacaville in the county? Close enough. The Honor Farm. There are some children's centers for retarded children or children with learning disabilities. Also the kids who've just been in or who are about to go into juvenile hall, kids who won't or can't do well in school because they just have too much energy and anger.

Brand: Who are the artists you use?

Farina: Right now we've worked with 400. Most of them are local people who don't have credibility in the industry – meaning that they don't have albums out or are not professional in the sense of being on the market. Some of them have been professional entertainers in the past, like Ah Wing who is a Chinese comedian, used to entertain the troops, and now doesn't have a whole lot to do with his life – he's 60-some years old. Other people who are aspiring to be professional performers. Others who are teachers who give lessons, piano lessons, voice lessons. And a lot of just San Francisco street musicians, performers, jugglers, tightrope walkers, and fire eaters and so on.

Brand: For these artists there's no remuneration or the expenses?

Farina: No. My theory was . . . Bread and Roses was really formed as a result of my anger towards the industry and finding out that it was the third largest money-making business in the country.

Brand: Which industry?

Farina: Music.

Brand: I didn't know that.

Farina: Yeah. I've got a lot of wealthy friends. I'm not so wealthy. Now when I look back I think it was an active nonviolent approach to my resentment, to my anger, which I think was healthy and good, because I might never have played the guitar again or performed again. I really wanted to get famous people in the institutions to expose them to institutional life, because I felt that they had a platform from which to speak and a responsibility to that platform which most musicians don't use at all. And so it's still an ambition of mine to use more famous artists, more people who have the ability to be heard by the public and might have more to say if they had experience with these institutions.

Christina Gannon

At a different Hillhaven Convalescent Hospital in San Rafael, the Horizon String Band performs. *[more →]*
"Hearts starve as well as bodies. Give us bread and give us roses." – James Oppenheim, 1912.

Plenty of famous artists performed at our Bread and Roses Festival last fall, but it was a big party for a lot of people to get together and have a good time. It was a public event so they're sure of being in the news. If you go to an institution, nobody's ever liable to hear about it except those poor people who are falling out of their wheelchairs.

Alexander: Unless it's a famous prison like San Quentin or Soledad or Folsom. What's the point of going to a little old convalescent home?

Brand: What is the point?

Farina: For us? Or for them? For me the point is to bring some sense of joy, freedom, beauty — whatever art has to offer. And I think also for an artist, there is a sense of participating in a community that's not there for them usually.

Brand: Have you been able to drag any famous folks besides yourself to the institutions yet?

Alexander: Steve Goodman, who is not as famous here but is more famous on the East Coast, came out and did a benefit for us. He performed in the county jail in San Francisco and was so enthusiastic about it that the next time he came out said, "I'll play anywhere, convalescent home, children's home, I'll make the music that's appropriate to the situation."

Brand: Why? What was in it for him?

Farina: He got turned on. He sang at the county jail in San Francisco, and an old Bojangles type character . . . it's a good story. Steve was playing in front of different cells, and sometimes walking while playing. It's a little complicated to perform in that jail, because people could only look through the bars of the cell and hang their arms out. They couldn't really see him once he got past. One old man was doing a shuffle inside the cell, and things got quiet. There's always that din, people talking and even when everyone else is quiet some cocky guy is always speaking up. I used to like to walk along and sing, and especially on gospel tunes or hymns, all of a sudden the guys'd be singing along. And if you sort of pretend you don't notice, they really chime in with do-wahs and everything and sometimes it's very beautiful. In this case this old guy was doing a shuffle, and I said to the guard, "Can we let him out to dance in the hall?" He said, "Mmgghhmm." I said, "No, really, it won't cause any disturbance and look how quiet they're being. They want to hear him." The guard said no no no no no, but finally we convinced him and so he let the old man out and a friend of his handed him a little paper cup of salt which he poured on the floor, like this, because you can hear it better when you're dancing. So Steve would play one chord and the guy would dance out the four bars to the measure, and then he'd play another chord and the guy would dance out the next four bars. Each one was different, he never did one the same. He was really a soft shoe-er. He was incredible.

Christina Gannon

Performing at Saint Vincent's School for Boys, San Rafael →

Alexander: Another one was Jesse Colin Young. He played at Napa Mental Hospital for us one afternoon. Jesse is very particular about his performances. He tuned his guitar for an hour before the performance at Napa, which I thought was conscientious. There must have been 400 people in the audience, most of them young adults. And they really got into it. They shouted and screamed and yelled and sang along on every song, and finally he let some of them come up and sing with him, which must have been heaven for them. He went on an hour longer than he was supposed to, letting people come up and sing with him and encouraging them to do it. It was really a very warm, generous afternoon. He was quite surprised himself. He was very nervous about being there.

Brand: Because . . .

Alexander: Mostly because the people look different. It's quite shocking sometimes.

Farina: And in every institution there's bright neon lights on.

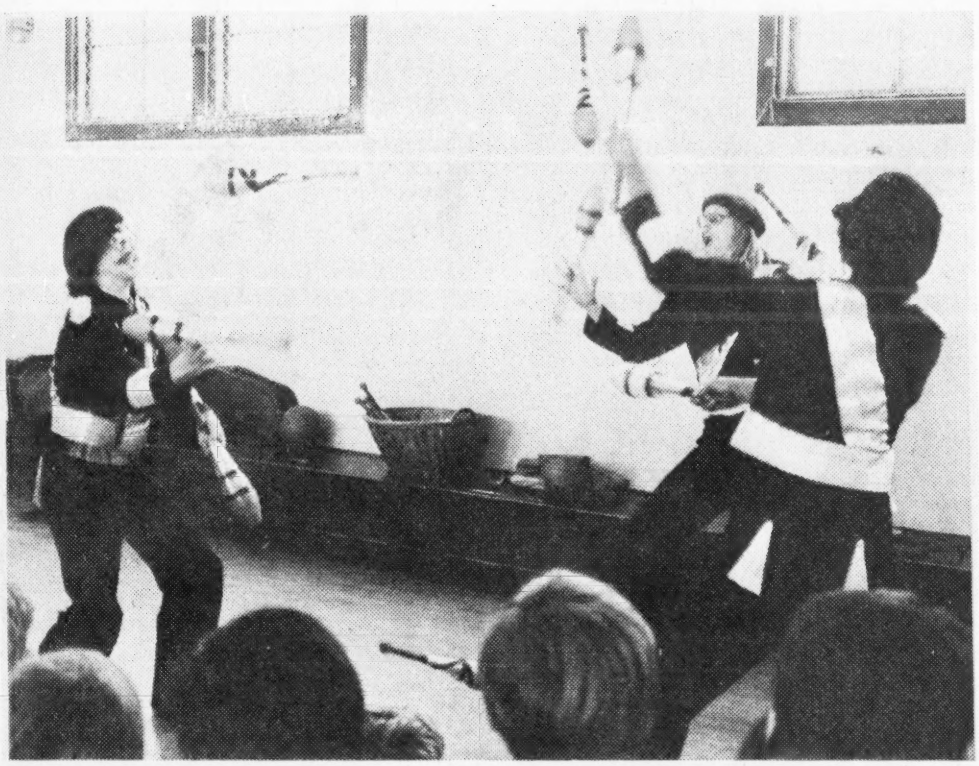
Brand: How's your relations with the institutional staffs?

Farina: In general, lately I think they're very good. I hit some bad ones. Marin County is very proud of the fact that they have a lot of small homes to keep the mentally ill rather than one large institution, and that's a good idea, but what goes along with it is that they encourage the patients to take on responsibility for everything. Which means that when Bread and Roses calls we have to speak to a patient to set up our gig. Which means often that we arrive and somebody forgot. Or only two people are there because the rest went to a movie, or they are all out playing a basketball game. So that's a nuisance. In some cases it's not just rude but dangerous. There was one young magician who was 17, very good, very clever, and he was going through his magic tricks. He held out a handful of cards and said, "Okay, who wants to come up and do a card game with me?" And two guys walked up. One was very withdrawn, very shy, hunched over, and the other looked like a big thug from Oakland. He looked like he could kill you by looking at you. So the kid said to the thug, "Okay, you go first, pick a card, any card. Not that card." And the guy's face dropped when he heard, "Not that card." He didn't know it was a joke. And I suddenly thought oh my god there should be someone in the room here, there should be some staff. Fortunately the kid was quick. "I was just kidding. *Any* card!"

Alexander: Mostly the staffs are very cooperative and very happy to have the entertainment. It's the real break in their month.

Farina: The good ones get everyone in one room, and in chairs, and ready for a show. The crummy ones, you get there and they say, "Oh yeah, well, we'll turn the Muzak off, and would you like to help us bring the patients out?" But the good ones are enthusiastic. It's volunteers and the occasional hard workers on the staff who care that make these places livable.

Christina Gannon



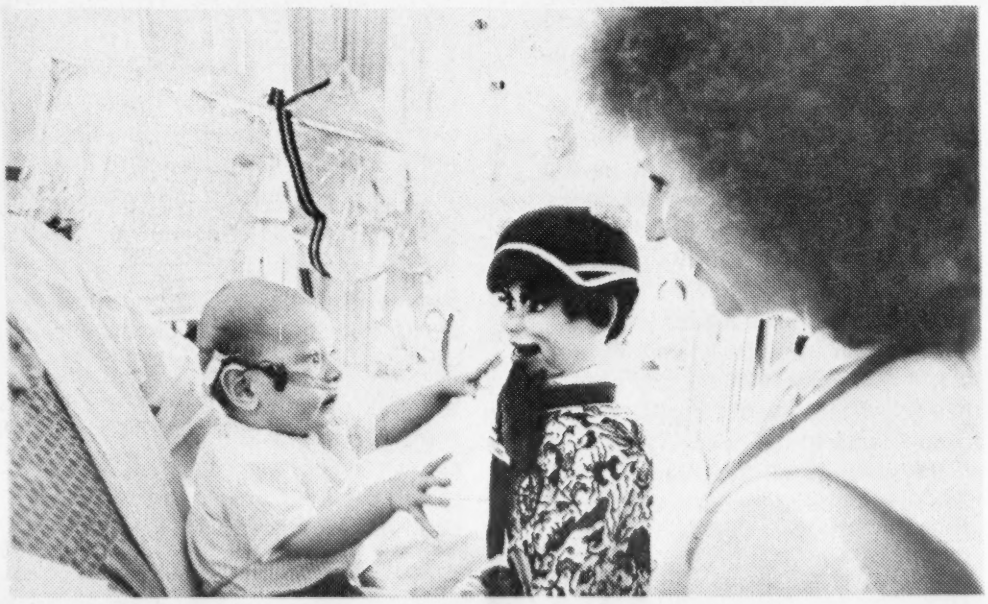
The Flying Karamazov Brothers!

Brand: Are there other groups like yours working? Or others that you've inspired?

Farina: When we started there was one group called Hospital Audiences from New York. They've grown and are trying to start on the West Coast as well. There's four or five throughout the country. I know of one that was a direct result of Bread and Roses, called Sunflowers, in Stockton – it's been going for a year and they do about 20 shows a month. In Santa Cruz there were some CETA workers working under the name of Living Arts Express – one branch of it was doing institutional shows, and when they heard about us through our festival they came and we had an interview and they modeled themselves after our program. And in San Francisco two people came out to the festival – a lady who had been an actress and a guy who had been an accountant and also a music critic for a San Francisco music magazine. We put the two of them together and before any paper work got done they had people in institutions performing. They got so excited about the idea, once they met each other and realized that they could work together, it was like a sudden overnight marriage, it got going so fast. They're calling their group COMITY. And in New jersey an ex-Bread and Roses performer, Will Charette, has started a group called Good Works Music, modeled after our program, as well.

We've always claimed that each community is different and therefore each project should be different. And I've never wanted the responsibility of having Bread and Roses expand and be associated with people that I don't know. The San Francisco group has been taking ethnic music into ethnic situations – in a Chinese old folks' home they will take Chinese music. That doesn't exist in Marin.

Richard McCaffree



On the children's ward of Moffitt Hospital, University of California Medical Center, San Francisco – Phyllis Barnard and "Joey."

Brand: Don't you have an unusual pool of talent in Marin?

Farina: It's unusually rich with famous people who hide out, who want to be here on vacation and don't want to be found, which is a drag for us, but every once in a while Dan Hicks says he wants to do something, or Maria Muldaur will come by. We took Paul Krassner into the Centerpoint Drug Rehabilitation Center. Paul went in, I think, with nothing in mind, just to go in and talk. And talk and talk and talk and talk. They loved him. The drug rehab center has a lot of the people, very bright, very well read, and when they heard Paul Krassner was coming in, they must have got **Realists** from 15 years ago. It was a very interesting political discussion. One staff member called me after that and said that a lot of people asked questions, spoke up, who never talk at all. That happens with music too. So and so will get up in a convalescent home at the end of a show and play the piano, and everyone will say, "We didn't know she played the piano." The piano sits there month after month. No one is inspired. They're drugged, they're bored, they're angry, they're fighting – it's something when you see two old women fighting in wheelchairs. It's like chickens going at each other – they're scrawny and they're twisted and they can't move very well, and they're so furious, when they're not drugged too much, and they will whack at each other, and the wheelchairs spin. They can really get mad.

Brand: Say more about what happens for the audiences.

Alexander: I took one show into a retarded home – belly dancers, and we brought champagne. Champagne and belly dancers. What happens in a lot of these homes is there are different sections of people – some of them are physically handicapped, some of them are mentally handicapped, and some of them are neither, they're just in a retirement home, and none of the groups will mix with any other groups. It's just like in a prison, there's a real segregation of who will talk to whom and who will sit by whom, and they have special places, special people that'll talk to me and won't talk to the other people. Well this time with our champagne and belly dancers they all got up and danced together. Which was very unique. They all got drunk together, and they all slept the next morning right through breakfast. The director told me they had such a good time, they had more physical activity than they'd had in months.

Farina: It was a retirement home rather than a convalescent home, so it was easier to get alcohol in.

Brand: What is a convalescent home exactly? [more→]

Alexander: It's people who are either there to die or they're there convalescing from being in a hospital and they have no one to take care of them.

Farina: They're really the hardest to sing or perform for.

Alexander: Because they're very depressed.

Farina: But, oh, they love children. And children are not afraid of them. I mean, I object to their urine on the floor and the smelliness, but kids have less apprehension I think. Marilyn — the secretary of Bread and Roses — her kids and some neighbor friends formed a singing group called "Biscuits and Buds" over the summer. They did 12 convalescent homes, and at the end of the summer they were all charged up and they said, "Oh, we'll do it on our Christmas vacation," and Marilyn asked which ones they wanted to go back to, and it's true that the ones that they didn't like were the smellier and the less well kept ones.

Alexander: In some of the convalescent hospitals they're very uncared for. They don't dress them. The people are wearing nightgowns and one sock.

Dan O'Neill: I saw an old woman being beaten. There's a convalescent home across the street from my house. This lady got out and she could hardly move, mhm mhm mhm mhm mhm. The matron came running out and grabbed her and put her back in. Three times she did that. And the fourth time the matron started cuffing her — bang bang. The woman was somewhere in her 80s.

Farina: I'm aware of one man who died from pills, the wrong medication. The male nurse was pretending not to be aware of it, and when the activities director questioned it, he said, "We'll check the book later." She said, "I think those are the wrong pills." It happened that we hired this activities director to come and work at Bread and Roses, and after a couple of months she started telling us stories. We were dumbfounded at the things that she knew that weren't getting out and I was saying, "Why didn't you do something?" All she could say was, "It was my job and I'm divorced and I have two kids to raise, and what was I supposed to do?"

Brand: That's interesting, because one of Governor Brown's arguments about getting volunteers into these institutions is that they'll find out things and say so on the outside.

Farina: That's perfect. Unfortunately, with Bread and Roses we cannot, because of our tax-exempt status, do anything openly political. That's why I want to take entertainers into those situations. Entertainers are creative, they're not stupid, and when they are confronted with that kind of thing, I think that they're sensitive enough to have a feeling of response.

Alexander: We did go to some hearings on convalescent hospitals and testified on the problems. A lot of the things are not necessarily illegal, they're just inhumane. They move people from room to room without telling them. They'll come back after lunch and they'll be in another room. It's confusing having to be without your things when you're older.

O'Neill: And we're all gonna be there in 30 years.

Farina: I know some of the reasons why the convalescent homes are so bad. They are like restaurants; there are chains of convalescent homes. The owners exchange jobs, and the dirty dealings that they do can be hidden because they all cover for each other. Little things like when somebody dies, you can go on collecting their social security after they've died until it's reported by the mortuary to the state. So they make deals with the mortuary, "We'll bury this guy but don't tell 'em for two months and I can collect so-and-so many dollars, and you can have a percentage of that." A girl who worked in our office was fired from her old job because she refused to sign a number of social security checks. Someone on the staff has to sign the checks before they're cashed. An operator of a home can get somebody to sign illegally, go cash their checks, keep them for himself, and never tell anybody. She said no, and he said, "Do you want to continue working here?" She went home, called several activities directors and friends of hers and said, "What should I do?" They all said, "Look, you're good enough that you'll be hired somewhere else if you get fired, you have a good reputation in the county, don't sign the checks." So she went back and said, "I'm not gonna sign the checks," and he said, "Okay, you're fired." So she called a friend who was working in the state Health Department, and within 24 hours they came and investigated. It was in Mill Valley, a place that we had complained about because they had been so rude at one of my performances. They closed the place down and had everyone shifted to other hospitals. Which is healthy in the sense that it hits the news and the public hears about it, but unhealthy in the sense that all those people are totally lost. In the middle of the day or night they're shifted, like from one concentration camp to the next. They miss all their friends, all the things that have surrounded them and they're accustomed to.

Alexander: And chances are they're in another hospital which again is overcrowded.

O'Neill: What do you do with old people? You can't eat them.

Farina: You can kill them.

O'Neill: Yeah, but they're not edible.

Alexander: They used to live with their families.

O'Neill: But they don't do that anymore.

Farina: Marin has several groups of volunteers to go to the older people's home, to clean it, or to be with the person, or cook a dinner. I think it's great, because they don't have to leave their home. For many of them, that's giving up when they leave.

O'Neill: I don't think anybody at any age wants to be unsettled. Taxes got my grandmother, her house, everything. She wound up in a condominium with my Polish aunt — big mustache. It's still better than the home across the street from me. They're escaping because they just want to go down to the store, but they're not capable, they get lost. No one in the home takes them out anywhere, so it's just day after day at the television set.

Farina: Gary Goodrow and I went to a home — he went to read poetry and I went to sing — and throughout the entire hour there was a voice and we never could figure out where it came from, of an old woman saying *[sepulchral gasp]* "Nuurse! . . . Nuurse! . . ." — which was very creepy. In and out of his poems and my song. At the end of the hour we were leaving, sort of gliding out through the urine — it was not the cleanest place — and an aide was wheeling a lady to in front of the TV. She was a tiny little woman, so frail, skin that was almost transparent. She was just at the edge, she was like a little leaf, in fall, when the leaves are so crackly. And she was raising one arm — it was about all the strength she had — and she was saying, "I don't wanna watch television. I don't wanna watch television." And the aide was saying, "It's only 8:15, bedtime's 8:30. You're gonna watch TV till 8:30." And he crammed her in front of the TV set. Gary just stood there and went UAUGGHH. At the end of our wonderful performance to hear that, that was the end of my day. All the way home in the car Gary kept saying, "Nuurse! . . . Nuurse! . . ."

Brand: Do you get some one-time performers that can't hack it again?

Alexander: I don't know if it's that they can't hack it or that their performance wasn't quite appropriate or captivating enough or something like that. Usually if their performance is good they'll come back to do it again.

Brand: What things go over best?

Alexander: I would say comedy, and songs. Children's songs for children,

Andy Rudolf

"Biscuits and Buds" – seven girls age 8 to 15 – sang at twelve convalescent homes during their summer vacation. Here, at Bayside Convalescent Home.

older people's songs for them. Popular songs and also the artist's own material. It's special to hear somebody's creation, but it's also special to hear something that you can sing along with, that's familiar to you. Comedy goes over very well with groups that are alert.

Farina: The mental patients relate so well to it because they see somebody in front of them acting out of his mind, and they register, "If he can act that crazy on the outside and earn a living doing it, what am I doing in here? If I can laugh and relate to that, I must have something going for me." At Juvenile Hall someone like Paul Krassner or people from the Committee go over beautifully.

Alexander: Workshops work better than performances sometimes. The first one I remember, was for a music instructor at San Quentin.

Farina: The first jam session was in the dining hall with Hoyt Axton, Verlin Sandals, Merle Saunders, and people from "Evolution of the Blues." It was especially funny because Hoyt has rifles in his bus, and at the last minute my pacificist girlfriend Martine was seen carrying six rifles to hide in the trunk of her car at the Howard Johnson's so that we could get in. Nevertheless the show went on very well. But it was rough because of the din and activity.

Alexander: Also, we brought a lot of acts. They want you to please every group, so you have to bring something for the Samoans, and the Filipinos . . .

Farina: Black, White, Chicano, Mafia. And some added. There's at least four separate groups.

Brand: No Chinese?

Farina: I guess there's no Chinese comedians and no Chinese prisoners. The jam session was so incredible. We got Jules Broussard, and who else?

Alexander: Nick Gravenites, Mark Naftalin, that bass player from Booker T.

Farina: Just a handful of people who were in town.

Alexander: And a drummer from Jesse Colin Young's group. Going in, the bass player was so nervous. He hadn't had any dope for at least an hour. He was shaking, saying, "How long is this gonna be? Where are we going?" Poor guy.

Farina: This is a character who normally gets up on a stage 45 minutes late and he's hot shit all the way. "Could I have some more lights please?" All of them, "When will we get out?" was the main question. That's what is fascinating to me about taking rock 'n' rollers into San Quentin. At first it's just, "Oh boy my name in San Quentin," but all of a sudden it's keys and gates and locks and guards and guns and big rolls of barbed wire, and then they're inside and really they're panicked. And performers normally, particularly rock 'n' roll, are so used to performing with either alcohol or dope, either on stage or right available whenever necessary during the show. I'm not talking about the old jazzers who are professional musicians and who really have a completely different attitude, but the rock 'n' rollers who I personally resent because of their nonprofessional attitude.

Alexander: They're used to playing to adoring teenagers.

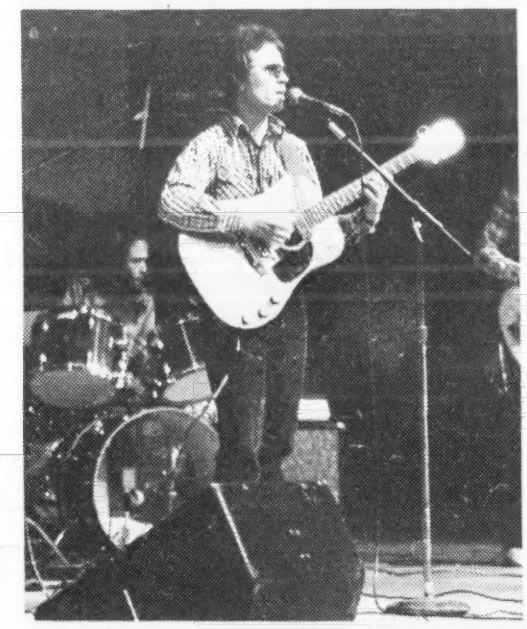
Farina: Yeah, and suddenly they've put themselves – which I think is courageous – in the position of being in front of another audience, who may or may not like them, they don't know.

So here was a handful of people who didn't know each other that well, had heard each other's names, maybe some of them had jammed together, they walk in, we set up the sound, everything's getting plugged in, they're tuning up, and they're sort of saying, "Well, what's gonna happen next?" And we're saying, "Why don't you just rehearse, go ahead and play a little bit." They start to play and because of nervousness, they're suddenly playing harmoniously together as if they've known each other all their lives. They get going for about 10 minutes and then in walk about 60 inmates.

Brand: So these guys were already cooking when . . .

Farina and Alexander: They were COOKING!

Farina: Oh boy, it was neat. They played for about an hour – incredible music. Then there was a break and



Country Joe McDonald (left) intelligently brought along female harmony to a Bread and Roses concert at San Quentin Prison this spring – Trish Robin, Nancy Scher, Sally Faulkner. Over the years Joe has done more benefit and free concerts than almost anyone – this was his third trip to San Quentin. At one point he exhorted the audience into his trademark exchange: "Gimme an F!" "F!!" Gimme a U!" "U!!" "Gimme a C!" "C!!" "Gimme a K!" "K!!" "What does it spell?"

we announced that inmates with instruments could get up and jam. There was one of the prettiest moments, and I regret not having it on tape. Jules Broussard sat in the middle with a horn player on each side of him, one was white and the other was black?

Alexander: That's right.

Farina: And they traded horn parts. Jules would be playing along, and he would turn to the guy on the right and they would play something together. They'd end that and then Jules would play a little more and turn to the guy on the left. And then in the end they all played together and Jules played two horns at the same time, which he can do. It was spectacular, and the inmates were really off guard, were listening without any self-consciousness by that time. It was beautiful to see their faces. I'll never forget one young white guy who'd been kinda bored with the whole affair but came nonetheless, and he didn't know who Nick Gravenites was on sight, he only knew the name from records. He got up and he was playing along on a guitar, and somebody must have told him that he was playing Nick Gravenites's guitar. He looked down and he looked around and he said in this loud voice, "This is Nick Gravenites's guitar?!"

But now that music instructor is gone, and the new one won't permit a large workshop. And there's a new warden who's much more stern.

Brand: Staff turnover is greater than the prisoner population turnover?

Alexander: Definitely.

Farina: With convalescent homes as well as everywhere else. They can't stand it, so they keep switching around. It's an ugly existence for them.

Brand: How long have you guys been doing this now?

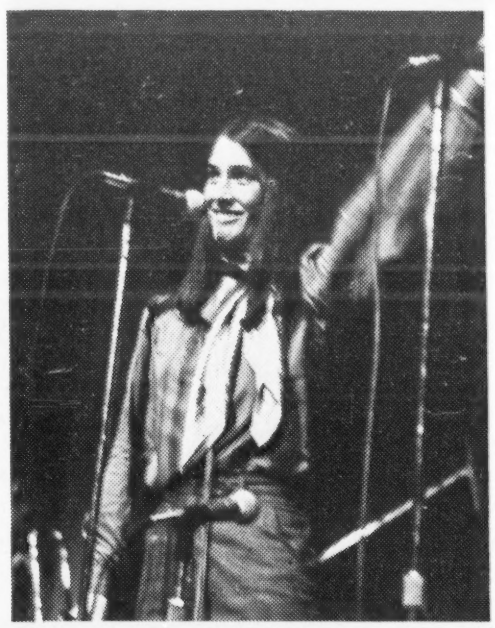
Farina: Since '74. It's frustrating. I was just thinking, in all these stories of good moments there are intertwined all these general complaints. And what's frustrating for me is to know that Bread and Roses can only exist if we don't open our mouths and complain. At the same time I am so uncomfortable. The more I find out, the more I realize that change has to take place, and somebody has to speak up. Somebody once said, "Well, if that's your goal why don't you take a bunch of businessmen in? They're the people who have all the money and who run society." And I said, "You're absolutely right, but they are also the ones who lack imagination. It's the entertainers and sensitive artistic types who can come up with alternatives faster than businessmen who are out to gain a buck, not for anyone else's benefit but to raise funds for their own life. I still have as a goal to get more "famous" people, but I do think that they are kept away from society, kept away from community life, family life, a kind of normal home life that most people have to deal with. Being on the road, in planes, in elevators, in hotel rooms, in backstages, you really are hidden, just the way an institutionalized person is hidden from society. Having watched one entertainer after another come out of an institution saying, "Boy, there but for fortune . . .," I can't help but think some of those creative minds will have to respond, maybe not now, maybe twenty years from now.

Brand: Well, you write songs. Are you doing anything out of your experience with these places?

Farina: I have, yeah. I don't know that Bread and Roses has been such an influence on me, because I was an influence on it.

Jennifer Ellis

Jamming in a San Quentin workshop, Nick Gravenites on guitar,



Brand

"FUCK!!" "What does it spell?" "FUCK!!" – etc. The girls waved their arms and hollered; the prisoners raved back; ball lightning formed between them in the air. A few minutes later Joe introduced another tune with, "Here's one for the rapists in the audience." It was his cold, graphic song about rape – the girls swayed forward to the mikes and belted the chorus, "Sexist PIG! Sexist PIG!" (Above) San Quentin prisoners and Mimi Farina.

Brand: Well, maybe we're down to the why this thing began and how it looks four years later in terms of the aspirations.

Farina: Well, I'm thinking it's time we did some sort of seminar or conference – I don't know yet what to call it – that deals with the public, and people who work in institutions, and people who have been institutionalized. Have them all in a setting where they can talk to one another. Every single time I go to an institution I come away having found out something that I want to change, something that makes me just irate.

Brand: Was it anger that started you on Bread and Roses in the first place?

Farina: Yes, a different anger. In 1973 there was an oil shortage. Oil is part vinyl which is what record albums are made of. I was in the process of separating from a singing partner, and the record comapny said, "Don't worry about signing a new contract, just make demonstration tapes, and if we approve, then you can make a solo album." So we put together a demonstration tape which cost $10,000 – that was the company's money – and we put it together on the assumption that if it was good enough we would use parts of it to become an album.

It took a long time to do that because I was doing it bit by bit, one song at a time, and I would go to L.A. when everyone was available and when I had the time. The engineer was really the person who was pulling together the musicians, but that also meant that while I was in the studio he was on the phone with Paul Horn and talking to other people making other arrangements. He was getting things done, but I needed lots of attention – being very very insecure – so I would sing for a half an hour, go to the bathroom and cry for half an hour and come back and sing. It wasn't what you'd call a comfortable situation. I did not feel invited. I didn't think I was good enough, didn't think I belonged, was getting no encouragement, and finally I was told that I was a marginal act, and the marginal acts that year had to be put aside because of the fact that there simply was not enough vinyl to go around. The President said to me, "Now, all you artists are the same. Nobody believes me, but these are the facts." I said, "That's a great thing to say to me. It relieves a lot of my worries, and I am more than willing to accept it. I thought you didn't like me. So tell me, what's going on? Am I so much of a marginal act that I'm not gonna be allowed to make any albums here or do I have to wait for 5 years, what's gonna happen?"

"Well, maybe you can find a producer. Maybe the right producer could give you the right sound." So there was about a year of those meetings. I was then setting up tours with my manager's assistant who was something of a sloth and so I was putting a lot of energy into it and becoming an organizer, although I didn't know it, which was great for me. And during the concerts I would say to the audiences, "We're in the midst of an energy crisis, that means we're out of oil, that means there are fewer records gonna be sold, that means you have more choice. You've gotta speak up. Currently I'm not being invited to make any albums. If you'd like to hear my first solo album, would you like to write to my company, here's the address. . . .

So at Madison, Wisconsin, they started a petition, and at the end of the week they showed it to me. There were a thousand signatures, and it read very politely, "We the undersigned would like to see a solo album by Mimi Farina," and some other nice things. A girl came up very shyly and said,

Jules Broussard behind him on sax. The rest are inmates.

Jennifer Ellis

"Is this okay? I just wanted to know if it was polite enough, because you kept stressing being polite." I said, "It really is polite enough and I can't tell you how delighted I am."

Then it happened again in Boston, only this time I provoked it. I said, "This is what they did in Madison." So, another petition went out – 1,000 signatures. And then in New York I opened a Phil Ochs concert, and from that I know that a lot of letters went in, and one phone call. And for the first time on this month-long tour my manager called me. I don't know how he found me because he never knew where I was. He said, "I've gotta talk to you." I said, "Oh, what is it?" He said, "There's some business about you talking on the stage." I said, "What, who said what?" And he said, "I'll just give it to you the way they told it to me. What they said at the company was that some bull dyke from the Bronx called up and said, 'On behalf of Mimi Farina, fuck you!' Did you tell her to say that?"

I said, "Is that all they said? Did they tell you anything about the letters and the petitions and so on?" "No, not a word." "You mean they didn't mention anything except this phone call?" "No, they said nothing else." I said, "That is so typical!"

Brand: That's interesting. That says a lot about what works, between thousands of signatures and one fuck-you.

Farina: So when I got back that's when I was sitting and staring out the window and thinking, really there's no point, I have no option except to leave. And so I've been without a record company and without a record for six years. But I finally nailed one last year with CBS. I'm glad to have a contract, but it's not so much a threat anymore as it was. I figure if they sign me, then they have to put up with me, and we'll see how many "up-product" numbers I'll do and how many of my own I'll do. I realize that I have to give up at least 50% of my own self, and I will, in order to be in the midst of it. I feel as though Bread and Roses works on the outside and signing a contract with CBS is being right in the middle. They'll have to put up with 50% of me as much as I'll have to put up with 50% of them and we'll both have to bend and I'm willing to do that. Whether they'll really get behind it or not, I have no idea. They seem to be sort of curious about this person who puts on festivals and has all these people come – I'm an oddball to them.

Brand: Where in that sequence did Bread and Roses start taking shape?

Farina: I have a cousin Skipper Henderson who has a restaurant in Larkspur now, and he has lots of ideas. He was working in a halfway house at that time, and we were out to dinner, and I was saying, "Oh the industry," and "Going out on the road is so hard," and "I hate clubs because you have to stay up so late and wait in between shows and you go home smelling like a cigarette butt, and nobody cares anyway, and the company's awful." And he said, "Why don't you sing where you know it would be useful, where you know people would appreciate it. You might come away with a different feeling, and a different sense of your own music, and self, and so on. Why don't you come to my halfway house?"

So I did. It was certainly not inspiring, but it sparked something. I saw a real need for music in those places, and it got me thinking about all the people – 40 to 50 acts – being dropped from labels because of the oil crisis, I thought, I can't be the only one, there must be people who are feeling just as rejected and are not sure what to do. And at the same time there must be stars who somewhere in their heart of hearts are feeling a little guilt for some of it, and I'd like to use that and put them in a setting where none of the industry exists, where just human beings exist, and they sing for the sake of singing and give for the sake of giving.

I am always going back to the fact that I feel that contributions should be just that – a charitable act. I really like the idea because it is so out of this media society to do something for the sake of doing it, not for what the reaction will be in the future, not for what you'll take home with you, but for the moment that it happens. This means also that I don't like to have the program expand and become nationwide, and I'm not crazy about having photographers there or having the shows recorded or even having them reviewed, although I realize the publicity will encourage other places to start similar programs.

It really pains me to see people who were inspired when they were young, who got chills all over at the sound of music or a piece of art, something that inspired them to want to do it themselves. Or maybe they never saw anything. Maybe it came completely from inside, but it made them excited and made them gleeful and happy and energized and vital, and to watch that go down the drain for the sake of the industry, for the sake of money, for the sake of receiving future funds that'll enable them to live until eternity in a happy house with a pool and a sauna, that is uninspiring to me and takes away from the value of the art. Maybe one can create wonderful songs on cocaine but it is short lived, and maybe someone can become a star overnight but that's

Jon Sievert

"Bob Baez." At the Bread and Roses Festival in Berkeley, Joan Baez impersonated Bob Dylan singing "One Too Many Mornings" so convincingly that music critics were calling the Bread and Roses office the next day to confirm, "Uh, WAS that . . . ?"

probably gonna be short lived. And we're so prone to getting the most the quickest, that most of what we do is short lived. Most of the good things we do don't have lasting quality, and that's what I'm after, not just for me but for anybody.

Brand: Do you get it from this?

Farina: Oh yeah. A sense of security, identity, schedule – there were so many things that I did not have before Bread and Roses that I have now. Somebody asked me, "What does it feel like to be a do-gooder?" I said I had never thought about it but to me do-gooders were people who did good for others and not for themselves, but there was no way to describe the Bread and Roses that way. Bread and Roses did me good, because I needed it in my life to know that I was doing something other than getting profit, and needed a schedule. I wasn't good at getting up in the morning and facing an empty day and having to decide moment by moment what to do. I'm a very organized person, I came to discover,and so that this has saved me from endless days of hopeless hours of not knowing what to do and sticking my thumb in my mouth and having that terrible feeling of limbo added to the feeling of insecurity of being a little sister to somebody who's famous. This gave me purpose in life and a framework within which to use it.

Brand: What was your religious upbringing?

Farina: Quaker. Both of my grandparents were ministers of different

Dave Patrick

Grand finale of the Bread and Roses Festival, October, 1977. On "Just a Closer Walk With Thee" – left to right – Gary Goodrow, Josh White, Jr., Jayotis Washington, Richie Havens, Terry Garthwaite, Freebo, Jackson Browne, Tubo Rhoad, Jerry Lawson, Joan Baez, Theodore Bikel, Pete Seeger, David Lindley, Terry Reid, John Herald, Gay Mentin, Mimi Farina, Jimmy Hayes, Arlo Guthrie. "Through days of toil and snares/ If I fall, dear Lord, who cares?/ Who with me my burden shares?/ None but Thee, dear Lord, none but Thee."

churches, so after my parents married – I guess when I was about 5, my oldest sister was 11 – they decided that the family should find a common church. So we were taken from church to church. We did about a year and a half in Buffalo and southern California visiting different churches, and we would all come home and discuss what we thought and did we like the choir and did you guys like Sunday School. Mother had been to a Quaker high school when she was a teenager, so they tried a Quaker Meeting and it seemed to appeal to them a lot. There was nobody preaching – there was no choir, which they both missed – but there was a sense of responsibility for everybody. There was a chairperson, and it was up to everyone in this silent room if he felt a need to say something out of responsibility to others, then he could stand up and talk, and if not you could sit and meditate in silence, think whatever you pleased, for an hour on Sunday with a bunch of other people. So we did that. As a child I was very resentful and we were all sort of squirmy and wiggly during the church meetings, and it didn't make much sense but I think that those hours that I spent in silence with grownups and with other people my age had some effect. It's kind of like entering therapy when you're older to be exposed to something that intimate and frightening and intense and whatever you want it to be. There really aren't any escapes and you can't giggle with your friends, or you can giggle but it has to be pretty suppressed.

Brand: So how does Bread and Roses look four years later?

Farina: I didn't have any expectations, I had an idea. People are always saying, "Has Bread and Roses lived up to your expectations?" I didn't have a vision in mind, I didn't have a picture, but I just had a feeling and an idea and it was so exciting that nothing could stop me from getting it going.

Brand: Was the idea whole or fragmentary? Did it come all in one piece?

Farina: Well, Lucie was the first person I called. She said, "Oh yeah, what a neat idea, I've got free time, I'd like to help." I never went to college, I barely finished high school. I had a bad time in school, so I was very nervous about the fact that I couldn't make whole sentences or type and lots of things. So I kind of said, "Fuck all that, I've got this idea. I know a guy who knows a guy – I at least have enough friends who can assist me and enough friends have graduated from college. So Lucie and I got together and I found a tiny room in Larkspur that was available. Lucie came over with a typewriter and we sat down and started inventing the brochure. And it was like dynamite, it had to come out of me.

Then we began fund raising and I went on KTIM and said, "I've started this group and this is what we're going to do and this is why and we have a room and a desk and a typewriter and a telphone and we need a secretary. So then there was a phone call and this girl came and she was wonderful and she became the secretary. It just kept moving faster than my thinking, so every time a new problem would come up, I was there with my notebook and I'd go home and think it through and come back the next day with a solution. I never had a moment to rest for the first year. And the first year it was all females, so it looked as though we were a feminist organization, which really irritated me. And they were all as beautiful as Lucie, so sometimes going into prisons it looked like we were a fashion show.

Brand: How did all this relate to your career?

Farina: Sometimes I worried about it. I thought, "Ooawhh if I do that, then I'll not only become a social worker but I'll lose any kind of respect as a performing artist."

Brand: It's the opposite, isn't it?

Farina: It turned out to be the opposite.

Brand: How does someone who's inspired by your example do it, start a Bread and Roses?

Farina: I think 50 percent of it is inspiration. That comes from some unknown force, so that part I can't talk about. Or be responsible for. But as far as logistics and how to set up a nonprofit organization, we are producing a pamphlet that describes how anybody in any part of the country could set up a program like this. I think that the approach is to start by working, not by getting the paperwork done. The success of a group is determined by the inspiration of the people. If the people see only the how-to's in order to get a project underway, it seems as though that slows them down. The red tape and the paperwork gets in the way of inspiration. But if you're inspired, in spite of everything you get the work done and then the paperwork follows. ■

GARDENING AND INSTITUTIONS *by Rosemary Menninger*

Rosie is Community Gardening Coordinator for California, working out of the Office of Appropriate Technology. —SB

Hospitals across the country are reporting that the suicide rate among adolescents is the highest in history. They attribute this to the breakdown of the family. Neighborhoods too are reported to have lost their cohesiveness. The two social institutions that have supported people throughout history — families and communities — are temporarily out of order and the refugees are being re-insitutionalized in hospitals, prisons, treatment centers and special schools. At the same time there is a gradual withdrawal of taxpayers' money, and a movement to get people out, back to the fragmented family or community that couldn't take care of them in the first place.

At a recent meeting of the major southwestern Indian tribes and high federal officials, the Indians said they wanted their institutions moved onto the reservations. Unlike the mainstream of America, these tribes have retained a strong sense of family and they want to take care of their own people. They told the representatives of the Office of Housing and Urban Development that they want new institutions that will be livable, not only for the institutionalized, but for members of the family as well. They also said they want gardens.

Chinle Valley School for the physically and emotionally handicapped has put in a garden on the windy cliffs overlooking Canyon de Chelley on the Arizona Navajo Reservation. To combat the desert wind, heat and sand, the school staff is having to pioneer new techniques of desert gardening, which may eventually enable residents of the surrounding area to garden more productively. This is a typical result. As institutions begin to cultivate their own land, they often cultivate ties with the community. The main effect of the garden, however, is on the children; gardens foster curiosity, caring and a sense of responsibility — the very things most lacking in institutions.

It is an old idea. Before World War II, Sonoma State Hospital in California was notorious for winning blue ribbons in the State Fair. They had the best flowers, vegetables, livestock and pies. After the war came a great gush of equality, and America didn't want hospital patients doing "slave labour" in the fields. Even prisons slowed down from demanding work of the inmates and today many prisons with gardens have a chain gang atmosphere for working outdoors. In some prisons gardening is an activity reserved for homosexuals.

The situation in hospitals has begun to change. Being chronically institutionalized does not mean staying in one place, but being passed with the buck from one residential treatment center to another, to jail, into a foster home for awhile. This is especially true of adolescents. Administrators are beginning to realize that they can't turn people back into the community, as lack of money is forcing them to do, without providing at least a focus for their lives.

The success of gardening as a therapeutic activity is due in part to the fact that it is interdisciplinary — involving design skills, scientific methods, repetitive tasks, communication with plants, and grovelling in the dirt. It also abounds with metaphors. Patients in a garden talk of the shock of transplanting to the roots; weeding and thinning becomes playing God; and pruning an example of channeling energy. This spring, after a gardener in a psychiatric hospital had committed suicide, his fellow patients planted fruit trees in memorium. Shoveling the dirt into the hole was intensely linked to burial, and when the fruit tree bloomed the following week, one of the patients said, "We've recycled him."

A newly published British study found that simply putting flowers on the dining tables of a psych unit brightened everybody's spirits. People talked more, ate more and the staff said the place just looked more alive. At Austin Riggs Psychiatric Hospital in Massachusetts, staff and patients participated in a garden and greenhouse that produced food and flowers. The garden was part of a new activities program designed for maximum creative output. This model is described in a book, **Activity, Recovery and Growth** by Joan Erikson and David Lovelass (W.W. Norton, 1976). Joan originated the program with her husband Erik Erikson. The program was so therapeutically successful that it has been adopted by Mount Zion Hospital in San Francisco. Adolescent psychiatric patients have their own studio-workshop at Mt. Zion, which is not staffed with psychiatric social workers but with craftsmen and women working on their own projects and willing to lend a hand to the patients. A professional gardener is growing flowers and food and the kids help him. They've begun to grow their own, and recently they've become involved in a community garden and a community greenhouse.

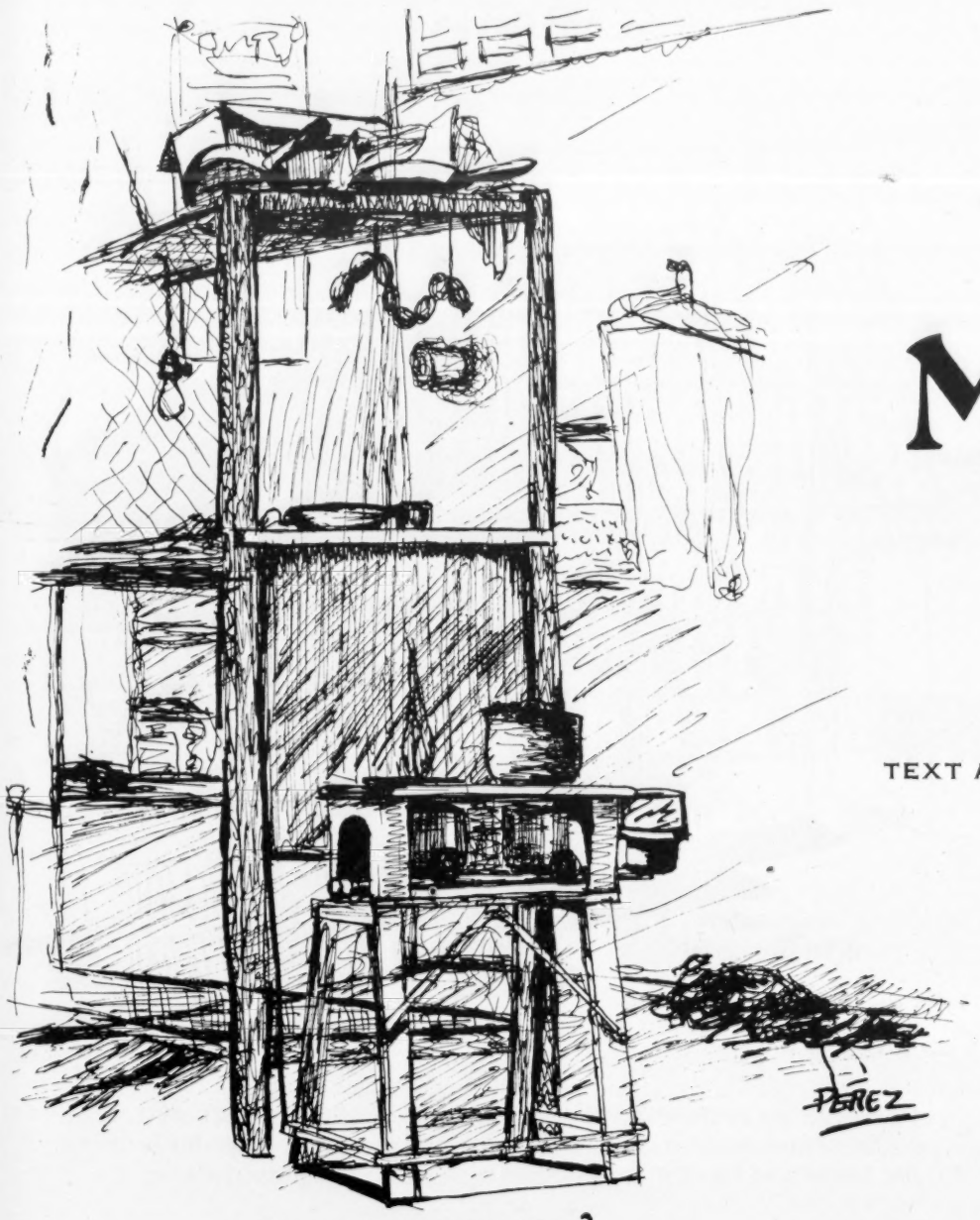
Funding for developing hospital gardens is coming largely from vocational rehabilitation sources. Guidelines in several states are being broadened to include pre-vocational training in self-sufficiency skills. For the most part, however, funding sources want some assurance that the people being trained can find a gardening job some day. This is a tough requirement to meet, but the Gardeners' Guild of Marin County, California is one program that is doing it. They are a group of landscape gardeners who accept state voc. rehab. money to train emotionally disturbed people in gardening. Depending upon the individual, the trainee joins the landscape crew after 1-2 years' preparation.

Another way institutions can link up with the community is by making land available for community gardens. In San Diego, for instance, a neighborhood got permission to use the land of a local handicapped program for a community garden with each family tending its own plot. Paths are being prepared for wheelchair gardeners. In Hunters Point of San Francisco, a methadone program for heroin addicts opened its parking lot to the neighborhood for a garden of containers.

As communities learn to accommodate people from institutions, the institutions may learn to serve the community, because it too is in need. Gardening appears to be one of the most effective ways to bridge this gap. ■

S. F. Examiner

"It wasn't nothing when we started by golly look at it now," said Buretta (right) of the Girls' Center of the San Francisco Youth Guidance Center. The ¼-acre garden, which was started four years ago, now provides a year-round supply of vegetables, fruit and flowers. Three times a week the girls themselves prepare meals for the 30 kids at the center with produce from the garden.



Where is the Fat Man?

The caption refers to the prisoner/owner/operator of an in-cell lunch counter. Pictured is a standing two-burner kerosene stove at the foot of the three tiered bunks; all leased from the prisoner's union. The bottom bunk served as both sleeping quarters and as a day-time counter top. The top two bunks held personal gear and restaurant supplies, such as the hanging chorizo sausage and the roll of napkins on the wall. The Fat Man boasted of putting a number of children through secondary school with this restaurant.

In a Mexican Jail

TEXT AND DRAWINGS BY ROSS PEREZ

In 1960 three Americans were arrested in northern Mexico for the possession of a small amount of marijuana. Efforts made through the American Consulate and the Mexican judicial system brought only further expense and they were not sentenced until the day of their release four and a half months later when one of them became delirious with a gangrene infection. Only then were they told they had a two- to twenty-year sentence hanging over their heads, and would also have the status of being escaped prisoners if they ever returned to Mexico. The following drawings and article are by one of them who is now a gardener with the Institute of Applied Ecology and is involved in starting therapeutic gardening programs in hospitals.

—Rosemary Menninger

THESE ink drawings show several views of the interior of a municipal jail in a large town on the West Coast of Mexico, circa 1960.

Although physical conditions bordered on the primitive, a major phenomenon can be seen by inference through these illustrations. The potential for human, if not always humane, interaction and self-determination were maximized, of necessity, by the method of social structuring (or lack thereof) within the jail.

True, sanitary facilities were on a very basic plane. One would flush the toilet with water from a five gallon olive oil tin that was filled by lowering into a well by rope. Late at night one could fight boredom and the heat by playing a game of batting the rats (with broom sticks) that crawled from the same plumbing. Washing one's clothes, cookware, and self was done with the stagnant water from the same source. One slept on cardboard-cushioned sections of cyclone fencing. Forty-nine men were jammed into each cell along with insects of astronomical size and energy. Food was minimal — boiled beans, two tortillas, black coffee, and one-quarter of a lime twice daily.

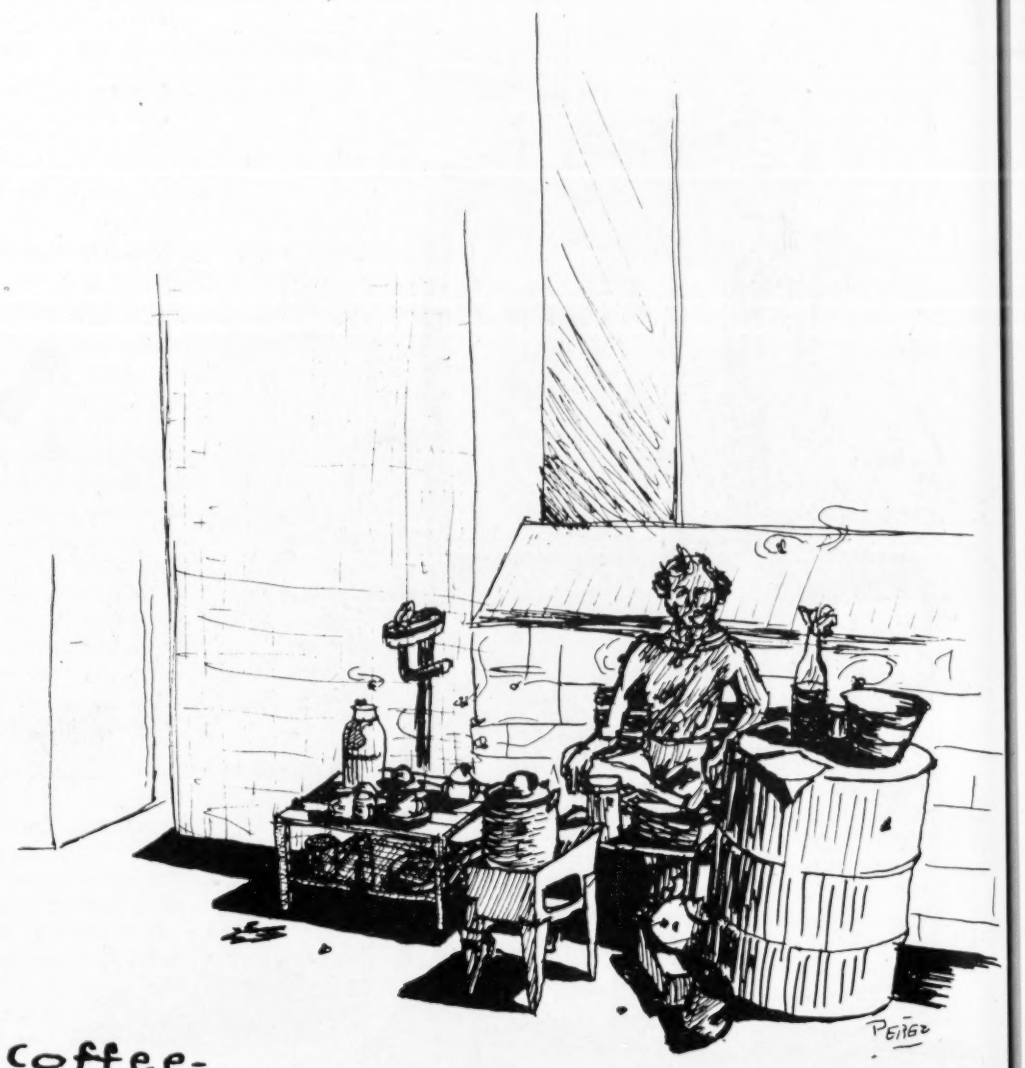
At the same time, very little in the way of opportunity or resources was restricted from the prisoners. Pictured here are a few samples of the results of initiative on the part of prisoners. There was a soda and pastry stand and an outdoor coffee and pastry stand, "Pablo's Store" was just that — it had very little stock other than chewing

A view of a fellow inmate from within the cell as he tries to get the guard's attention late at night.

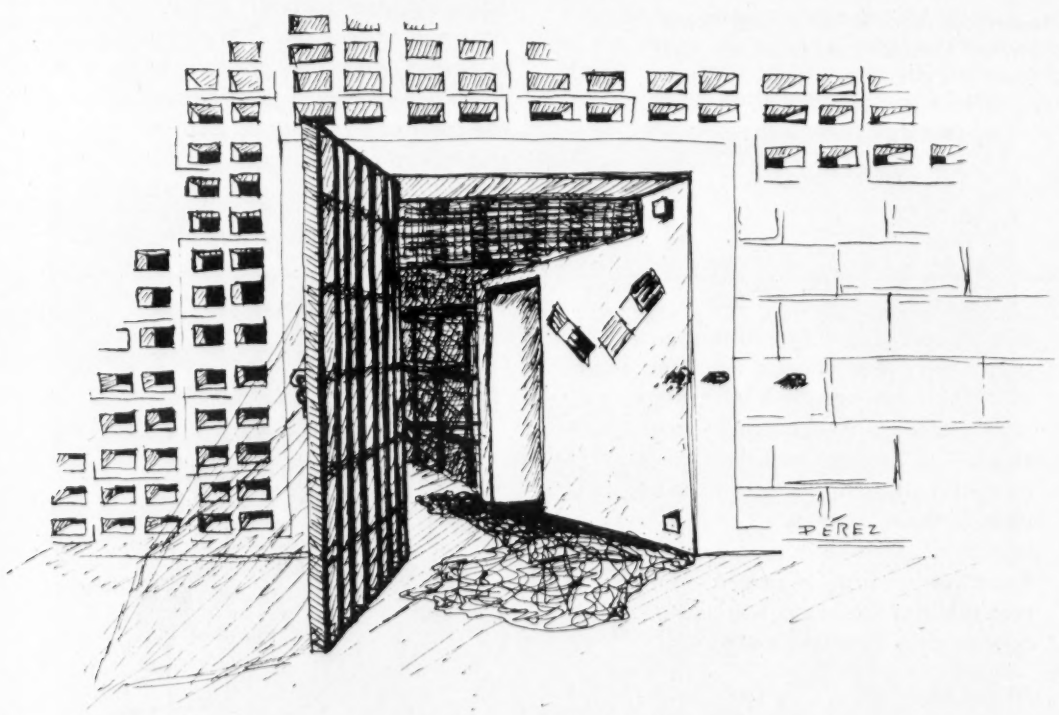
gum and religious icons but arrangements could be made for damn near anything, from drugs and prostitutes to the New York **Times**. There were several lunch stands, a prisoner-run laundry, musicians, movies, medical care, artisan-craft shops, all started and run by prisoners to meet inmate needs and turn a small profit.

While the prisoners were locked up and couldn't go out into society, society could come into the prison and visit freely and often. Rules were few and outside supervision of internal matters was minimal. Everything was regulated by inmate code of honor and tradition. The internal hierarchy of power was based primarily on three sources — length of sentence, degree of skill (be it with words, business practices, craftsmanship, or whatever), and external resources.

This all made for a quite lively society of inmates. One was able to contract with outside suppliers and arrange for internal work space to start a business. One could contract to supply a service, and hire workers. One man set up a medical clinic with the help of his wife, who was a registered nurse and visited twice weekly. Another man contracted with individual prisoners to launder their clothes and hired four fellow prisoners to do the actual work under his supervision. Some others would collect cooking utensils and set up lines of supply from the outside to start restaurants. There were two distilleries. About a dozen men had set up a craft guild to manufacture saleable items of folk handcrafts to outside jobbers that would in turn sell the crafts to the tourist trade. This guild had extensive supply lines for tools and raw materials.



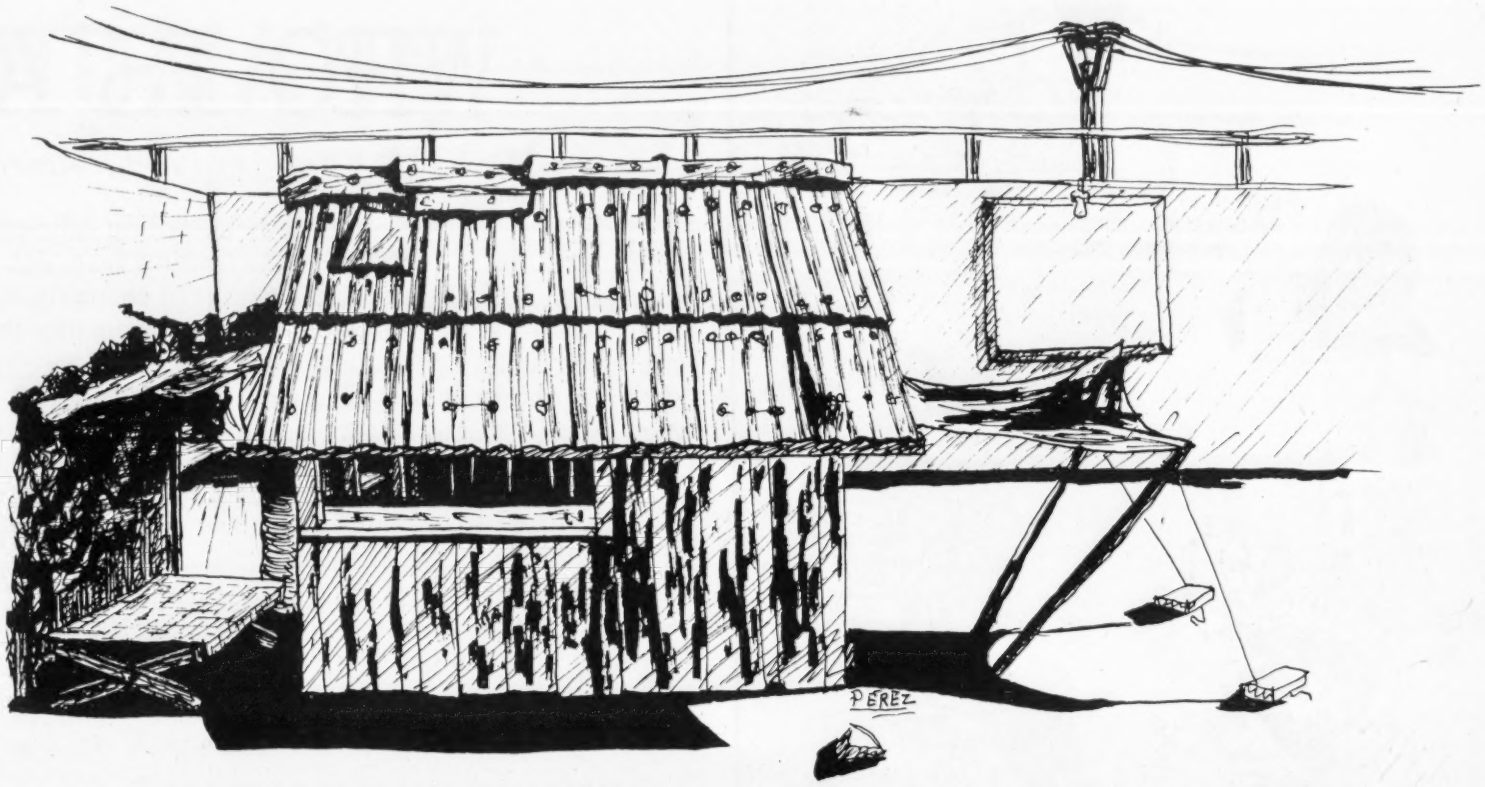
Outside in the communal patio, which is open from dawn until dusk, a coffee vendor with his charcoal burner. And on the oil drum, his kerosene fire starter and his dishwater.



The entrance (from the corridor) to one of the five forty-nine man cells, showing the open concrete-block construction. Within the cell the overflowing doorway to the latrine can be seen.

A prisoner could apprentice himself to an artisan, a businessman, a service profession, or initiate his own service. One man tried to set up a rodent extermination service with the use of three imported boa-constrictors. (Whether the rats got the snakes or the snakes ended up in someone's cooking pot, I don't know, but the extermination business failed.) Chickens were raised as pets and sold for food. Small chili and onion gardens were run within the prisoner's compound. On visiting days an inmate set up a projector and ran Mexican detective films interspersed with Walt Disney bi-lingual cartoons brought in by the inmate's visiting uncle. Portraits were drawn and painted for meals on visiting days. Drugs were dealt, sex was sold, food was furnished, books were bought, and one man gave boxing demonstrations for a living.

Visiting times were set up on a twice-weekly schedule. Starting at sun-up



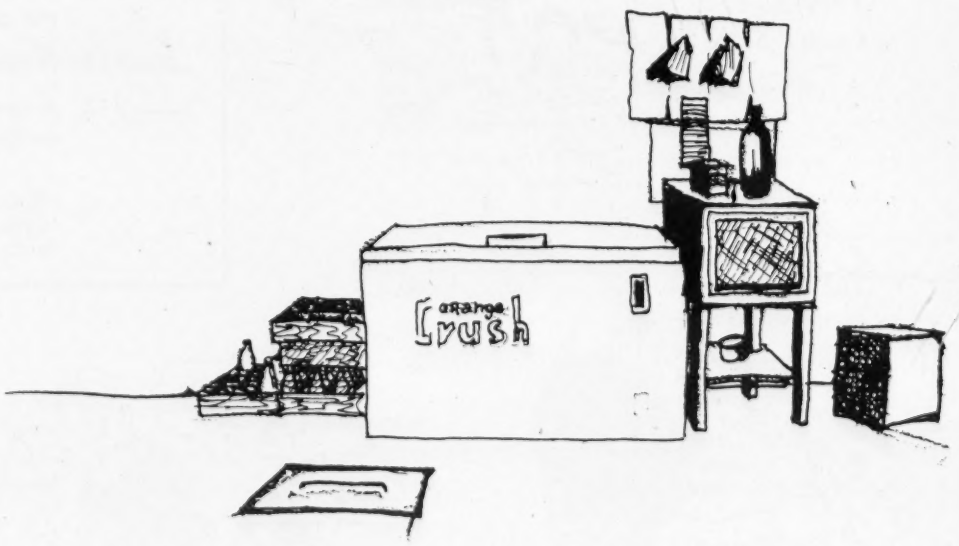
Pablo's store

Viewed from the coffee vendor's position, the upper center of the patio showing the shack of a comparatively wealthy prisoner (he had to lease the ground, pay building permits, materials taxes, etc., to the prisoner's union). Notice the chili and tomato arbor above the day-bed. This store stocked a conglomeration of minor items such as chiclets, religious icons, candles, and magazines. On the far wall is the built-in movie screen where one could see movies on Saturday nite. Mexican detectives interspersed with Daffy and Donald Duck demonstrating how a latrine is built, in Spanish.

on Wednesday, a steady stream of friends and relatives would pour through the front gate, bringing with them not only the supplies and raw materials contracted for during the last week, but also whole family groups spanning three and often four generations complete with all the makings for a day's outing. Into the prison compound would come groups of laughing, smiling people with their arms, shoulders and backs loaded with chairs, benches, tarp-rope-and-pole awnings, home made barbecues, charcoal, pigs, chickens, clay or porcelain kettles of every imaginable Mexican dish, melons, sacks of fruit, wash tubs with blocks of ice, guitars, basses, a marimba, jugs of fruit drinks, record players, all the children, half of the pets, grandma's weaving, etc. All was lightly scrutinized for firearms and alcohol on the way in. By eight-thirty in the morning the compound was a combination market place/amusement park/festival/family picnic/block party.

Prisoners had complete access to all cells and the patio (compound) between dawn and dusk. Everyone informally visited with everyone else throughout the prison all day. With the coming of dusk, the visitors would pack up and check out.

This was just the warm-up for Saturday, which happened much the same, except that at dusk only those who didn't want to stay overnight would leave. In addition there was free access into the patio until nine o'clock when paid movies were shown. After the patio door was locked there was still freedom of all the cells and the cell corridor for prisoners and visitors. Within the cells, among linen and blanket partitions, loud music and quiet laughter would last until near dawn. At dawn a visitor might leave, or stay for Sunday morning sunrise mass and leave afterwards. ■



A soda and pastry stand inside the corridor. The owner paid for radical lung surgery as well as supporting a wife and 6-1/2 children through this business.

DR. CHRISTIAN BARNAARD IN THE YEAR 2000.

your child who is so intelligent and aware that you seem to be subhuman in the child's eyes..

WHO IS A

by Paul Lees-Haley

HUMAN RIGHTS are already a burning issue of our time, but science in the coming years will open up many new possibilities in changing forms persons take, thus complicating still further the nature of human rights questions. This questionnaire asks your opinion about who we are talking about when we say "human." The crucial question for each item below is, "Is this a human being, and presumably therefore entitled to the rights and privileges of a human being?"

Rate each of the items below on a scale of 0 to 100, where 0 is definitely not at all human and 100 is definitely fully human. Pick any number from 0 to 100 to estimate the degree to which you feel each item is human.

____ 1. A test tube baby – a baby raised in a mechanical womb from the time of conception.

____ 2. A grossly abnormal mutant person resulting from a radiation accident.

____ 3. A computer that can learn faster and respond more intelligently than the average person.

____ 4. A robot that can walk, talk, play games, and solve problems that many people can't solve.

____ 5. A person frozen just before dying of cancer, kept in a deep freeze.

____ 6. A person in a coma, supported by artificial systems.

____ 7. A body with an artificial heart and a brain replaced by someone else's brain.

____ 8. A person's brain living in a chemical solution in a life support system removed from the body.

____ 9. A genius.

____ 10. A clone (a person regenerated from the cellular material of a donor – an exact copy of the person the cellular material was taken from.)

____ 11. A newborn baby.

____ 12. A new being developed by recombining DNA from an ape and a person – half ape, half homo sapiens.

© Copyright, 1978. The author is interested in data obtained through the use of this instrument both psychometrically and as a tool for

HUMAN?

Illustrated by Gary Hallgren and Dan O'Neill

—— 13. A new being developed by recombining DNA from a plant and a person.

—— 14. A new being developed by recombining DNA from a fish and a person.

—— 15. A profound mental retardate. Someone so mentally retarded that they cannot walk or talk, and have to be fed like a newborn baby.

—— 16. An adult person.

—— 17. My ideal of what I would like to be.

—— 18. The average person on the planet Earth.

—— 19. A foetus.

—— 20. A premature baby.

—— 21. A person who has killed another person.

—— 22. A patient in a mental hospital.

—— 23. The creatures existing two million years or so ago from whom we evolved (homo habilis).

—— 24. A cyborg (part machine, part human).

—— 25. A human body, alive, but without the brain.

—— 26. A human heart in a life support system, removed from the body.

—— 27. A piece of human flesh, living in a fluid in an artificial life support system.

—— 28. A person who travels in space at near light speed for 100 of our years, comes back, and does not understand the new world at all.

—— 29. A monkey who can talk.

—— 30. A child of yours who is so intelligent and aware that you seem in his or her eyes to be a sub-human, similar to a barnyard animal.

—— 31. An intelligent extraterrestrial (being from another planet).

—— 32. A dolphin who speaks your language.

—— 33. A complex crystaline substance which appears to be conscious.

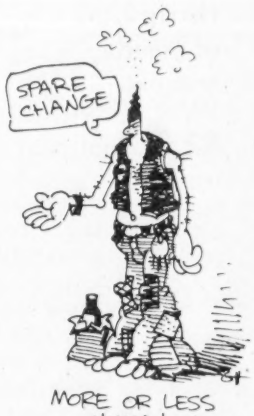
—— 34. A baby grown from an artificially created sperm and egg — a synthetic baby.

—— 35. R2D2. (Robot in "Star Wars.") ■

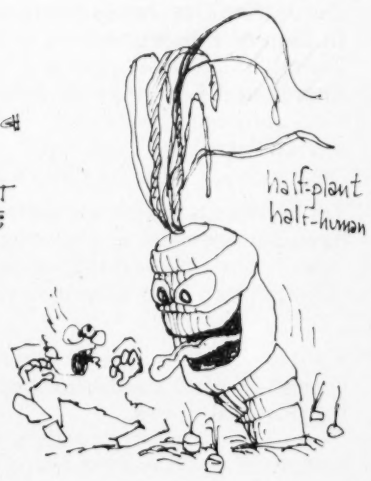
discussion in values and ethics seminars. He may be reached c/o Basic Research, Inc., 2427 Penn Street, Huntsville, Alabama 35801.

the clone and donor..

A GROSSLY DEFORMED MUTANT PERSON (THE ONE ON THE RIGHT; CHECK THOSE EYEBALLS)



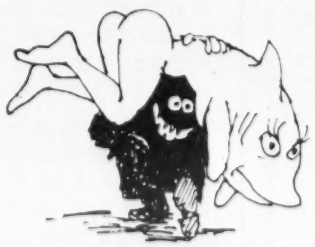
MORE OR LESS HUMAN

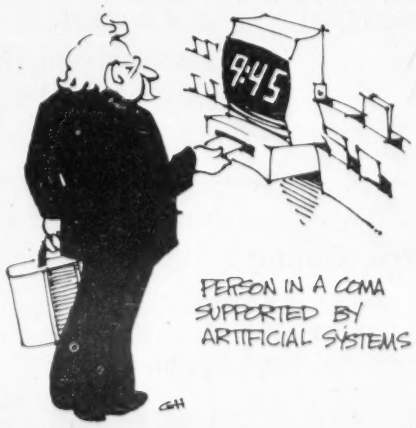


person frozen prior to death from cancer.. or.. "will Uncle Waldo walk among us again??" or.. "is a T.V. dinner fully human?"

ALMOST HUMAN

TO ERR IS HUMAN...





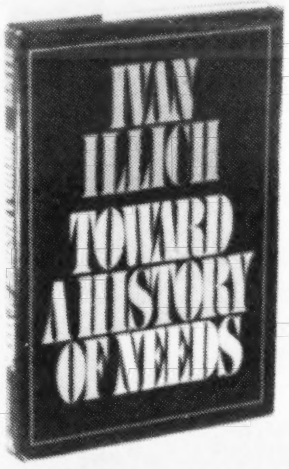
PERSON IN A COMA SUPPORTED BY ARTIFICIAL SYSTEMS

Toward a History of Needs

The penetrating mind and needle of Ivan Illich meets further bloated institutions of the world money made — all commodities and services which bulldoze culture flat. The enemies he identifies are everywhere, handy for your personal, local flanking moves.

—SB

Toward a History of Needs
Ivan Illich
1977; 143 pp.
$2.95 postpaid
from:
Pantheon Books
455 Hahn Rd.
Westminster, MD 21157
or Whole Earth



CONTENTS

Useful Unemployment and Its Professional Enemies
Outwitting Developed Nations
In Lieu of Education
Tantalizing Needs
Energy and Equity

•

Today, words that are directed to one person's attention have become rare.

•

For two decades now, about fifty languages have died each year; half of those still spoken in 1950 survive only as subjects for doctoral theses.

•

Beyond a certain threshold, the multiplication of commodities induces impotence, the incapacity to grow food, to sing, or to build. The toil and pleasure of the human condition become a faddish privilege restricted to some of the rich. When Kennedy launched the Alliance for Progress, Acatzingo, like most Mexican villages of its size, had four groups of musicians who played for a drink and served the population of eight hundred. Today, records and radios, hooked up to loudspeakers, drown out local talent.

Gertrude Stein:

"Everybody now just has to make up their mind. Is money money or isn't money money. Everybody who earns it and spends it every day in order to live knows that money is money, anybody who votes it to be gathered in as taxes knows money is not money. That is what makes everybody go crazy."

—Sent by
Bud Spurgeon
Austin, Texas

Metric scaling

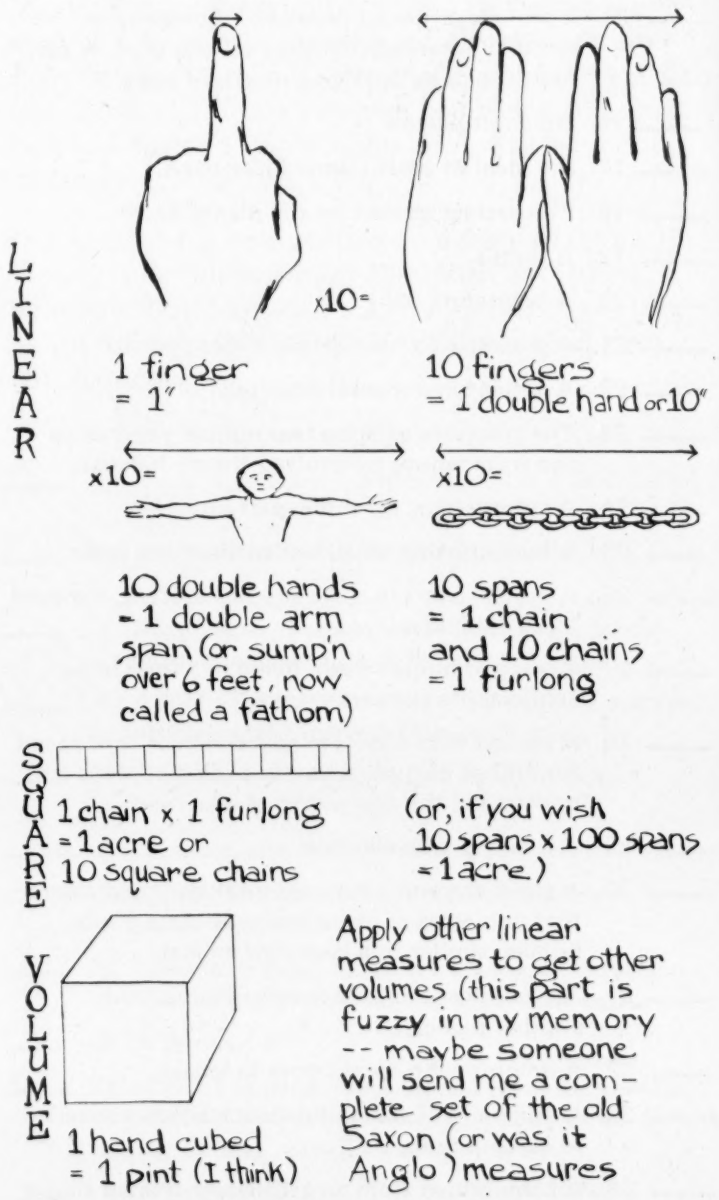
. . . I wonder if John Michell ever tried to figure out blueprint scales. Quick, what does 19/32" equal when 3/8" = 1"? Give me the metric system.

Frank Dobrushken
Seattle, Washington

Olde metric

. . . Ye Olde English system was an integrated decimal system of which we have only vestiges . . . the inch, hand, fathom, chain, nautical mile, acre, pint, pound and maybe a few others. It was a pure system 'till Jules Ceaser imposed a few things on top of it and ruined this beautiful system for all time. The foot, yard and mile are impositions that destroyed the old English decimal system. And, I must add, the *foot* is *not* English: it's Roman or French.

The system worked kinda like this ("kinda" 'cause it's been six or seven years since I did any reading on the subject and memory is uncertain):



Any how, a pint filed w/cool water weighed a pound and a single arm-span cubed of cool water weighed a tonne.

Later, the BTU was added on (the heat necessary to raise 1 pint of cool H_2O 1 degree F). And there is more — much more. It's an integrated decimal system.

This was a people's system: an absolute system for standardized measures and a relative system for relative measures — i.e., a person could get a wand (1/2 double-arm span divided into 100 equal units) calibrated with nation standards, or could use their own body to do the measuring (for example: a door should be 1/2 spans wide, and 1 span + 2 hands high — doesn't matter if you're long or short — your door will work for *you*! etc.).

As Michell says — let us be traditional and not be conquered by the technologic metric system (it has cold vibes!) and I add — let us be truly traditional — take the trash out of the Olde English system (foot, yard, mile, etc.) and get back to a people's decimal system (it has warm vibes!).

Jim
East Wind Community
Tecumseh, Missouri

John Michell comments

Sir, I was delighted to see your reprint of my pamphlet **A Defence of Sacred Measures** written in 1970 against the attempted imposition of metrication in Britain and America. The current position here is that our much hated Metrication Board, having failed to make us adopt metrication *voluntarily*, is now trying to get Parliament to make it *compulsory*, with threats of jail sentences for people who continue to trade in ounces or yards. Let U.S. citizens be warned by this. You are also being told that metrication will be voluntary. It has never been adopted on those terms. There were metre riots in 18th-century France when the police arrested non-metric market traders and smashed up their scales on the market crosses. In my pamphlet I predicted that the "republican common sense of America and practicality of the people" would defeat the metricators, and I am still convinced that that will be so. As in Britain, the government will then try for compulsory powers. Here they are meeting furious resistance, and several victories have been won. The pint of beer is to remain unchanged; the mile has successfully resisted the kilometre on the roads; the Conservative Party opposition is pledged to fight for the retention of our other traditional measures. Very few people in this country want metrication, certainly not enforced by law. Many are utterly determined to resist it. And the curious thing is that no leading politicians are actively supporting it. It is being introduced by stealth, by bureaucratic methods. One wonders just who *is* behind this tyrannical absurdity, and who or what is orchestrating the metric onslaught on Britain, America and the rest of the world? I think you hit the nail on the head with your comment that the spread of nuclear energy and the metric system are all one. "Both are despicable attempts by government to put an entire people on one 'convenient' system."

If any of your readers in America would like to join our organization and help to defeat metrication in Britain before the contagion spreads, they can receive our propaganda by writing, preferably with a token donation to costs, to this address.

Yours faithfully

John Michell
Founder
Anti-Metrication Board
Stroude Manor
Blackstroude Lane
Lightwater Surrey
England

Note also that there is an Australian Anti-Metric Association, Box 94, Ivanhoe, Vic. 3079. 44-2013. —SB

Metric feet

Neither the foot nor inch, nor any other English unit, adapts readily to a decimal numeric system. The modern carpenter builds walls with studs 1-1/2 by 3-1/2 inches, and uses a tape measure graduated in 1/16 inches, but finds it more convenient to eyeball a "tenth." His building is at the same time being assembled on a lot surveyed to hundredths of feet. Have you ever tried to convert from tenth inches, or worse yet eighth inches, to hundredths of feet?

Bob Krimmel
Tahlequah, Washington

Metric proximity

One thing that used to impress me was how my auto-shop teacher could look at a nut or bolt and automatically reach for the right socket or box-end. If by chance he picked the wrong size (seldom) and it was say too big he would automatically pick the next size smaller, and sure enough it would probably be the correct size. With four or five sockets sitting on the fender protector, if he looked at a bolt and thought it was probably a 9/16" he would put that socket on his wrench and see if it fit. If it didn't, because it was too big, he would know which socket size was next smallest. In this case it's a 1/2" but that's not readily obvious. It might have been a 17/32" or some such fraction. I could never remember the sequence of fractional sizes. I was so impressed that he could, and I used to think that someday I would. Well I never did and over the years found the situation extremely frustrating. Then I got my first Japanese motorcycle, a Yamaha RD-400, a truly superior motorcycle.

The first time I picked up the wrong size wrench and had to think about what was the next smaller size I knew my frustration had ended. If I picked up a 15mm socket and it was too big I knew I needed a 14mm or maybe a 13 mm depending on the relative error. . . .

James Webb
San Francisco, California

Interesting point. However the argument made by others that metrication means that all equipment will fit each other is false. German bolts and Japanese nuts are both metric but will not thread. I say, good. —SB

FORMULA FOR FREEDOM

1. figure out how to get what you want.
2. get it.
3. as it starts to slip away, watch it go.

QUERY FOR SAINT PAUL

are we not rather
but poor perfect bodies
and fine flesh housed
or caged within wanton
ravenous souls that know
nothing of the loving ways
of our touchable lord, the
teeming earth & air?

—Lee Perron

GOOD WORK, GOOD REST

SOME IDEAS FROM WILLIAM MORRIS

BY CONN NUGENT

Morris in 1887, age 53. Morris & Co. had attracted a wide following for its decorative work, and Morris himself was well known for his epic poetry and his translations of the Icelandic Sagas. But underneath was an unpublicized disgust with society. "Apart from the desire to produce beautiful things, the leading passion of my life has been and is hatred of modern civilization . . . this sordid, aimless, ugly confusion." That "leading passion" would draw Morris to socialism.

Conn Nugent, who did the Cuba article "Havana Province 1977" in the Fall 77 CQ, *has lately assumed a position of financial responsibility with New Alchemists at Woods Hole, Massachusetts – a group William Morris would undoubtedly applaud.*

–SB

I found that the causes of the vulgarities of civilization lay deeper than I had thought, and little by little I was driven to the conclusion that all these uglinesses are but the outward expression of the innate moral baseness into which we are forced by our present form of society, and that it is futile to attempt to deal with them from the outside.

WILLIAM MORRIS covered ground. He was a prolific and influential designer: furniture, wallpapers, fabrics, books, stained glass. He was a poet and essayist. And he could weave, paint, embroider, dye, and brew beer.

His talents earned him fame and a comfortable living. Even more, he was happy in his work. Morris thrived on it all, poems to tapestries. In the process, he developed a reputation for energy and geniality. He was also known for a fierce, short-lived temper (he used to kick through door panels), but in a way that too meshed with the image of a contented extrovert.

So when, in 1883, Morris declared himself a socialist – and there weren't many English socialists in those days – the news caused a stir. He was 49 years old. Until his death in 1896, Morris became an agitator for class upheaval, convinced that both politics and art demanded social equality.

WHAT WAS WRONG

MORRIS'S HAPPINESS was real. He loved to make things and was healthy enough to recognize that the things he made were beautiful. He also appreciated the conditions of his labor. The partners in the firm of Morris & Co. were friends and fellow craftsmen. Everyone in the operation made a decent wage and worked in pleasant surroundings.

"Larkspur" wallpaper. In 1861, Morris and a few friends set up what came to be known as Morris & Co., specialists in the decorative arts. In one ten year period, Morris contributed over 600 original designs. His importance for later artists was considerable. Sometimes that influence is obvious — Art Nouveau, for example. Other times the influence is surprising. One unlikely follower was Walter Gropius, founder of the Bauhaus movement in architecture. He and other minimalists were impressed by Morris's insistence on the marriage of beauty and utility and the need for art to be everywhere.

But an artist looks outward, and Victorian England was a sore sight for anyone with compassion and strong taste. Imperialism was in its heyday. The dominant culture was mannered and extravagant: refinement had come to mean fat furniture, repressed sexuality, and a godawful smugness. The political power and the social delicacy rested on an economic system as raw as a wound. It may be difficult to imagine the squalor of working-class lives and the ugliness of the urban environment. For years, Morris seethed. When at last he emerged into political life, he came prepared with a systematic criticism.

He proceeded from a moral assumption. Mastership, the setting of one human being over another, was radically unjust. "Nothing can argue me out of this feeling, which I say plainly is a matter of religion to me: the contrasts of rich and poor are unendurable and ought not to be endured by either rich or poor."

To Morris, industrial capitalism was a form of advanced, hypocritical mastership. Capitalist competition had bred "a state of perpetual war," and only the winners were aware of it. There was competition for profit, "the war between the organizers of labor." It produced gluts of ugly products accompanied by artificial famines that kept workers ill-paid or unemployed. There was competition between worker and superior, "the war of class against class." It ensured a mutually debasing alienation from honest labor. And maybe worst of all, there was competition for security and status, "the war of rival men." It thrived on anxiety, and anxiety provoked a kind of social cowardice that throttled cooperation and friendship. "We live in daily terror lest we should lose, some of us our domination over others, some of us our leisure, some of us our decent livelihood; and that fear forces us, I say, to deal hardly with our fellow men, lest they should rise above us and take our places."

All this has implications for art. Art is a product of voluntary work, Morris said: it is "man's expression of his joy in labor."* When workers are free from anxiety and solicitous of their fellows, they will seek enjoyable work. They will take to making things that will please themselves and please others. Those things will be art, and beauty will become commonplace.

Art, said Morris, is "the intelligent production of beautiful things." It should embrace most of the objects of daily life, rooftop to teacup. The distinction between "art" and "craft," between "artist" and "artisan" struck Morris as aristocratic flim-flammery, a bequest from the egotism of the Renaissance.

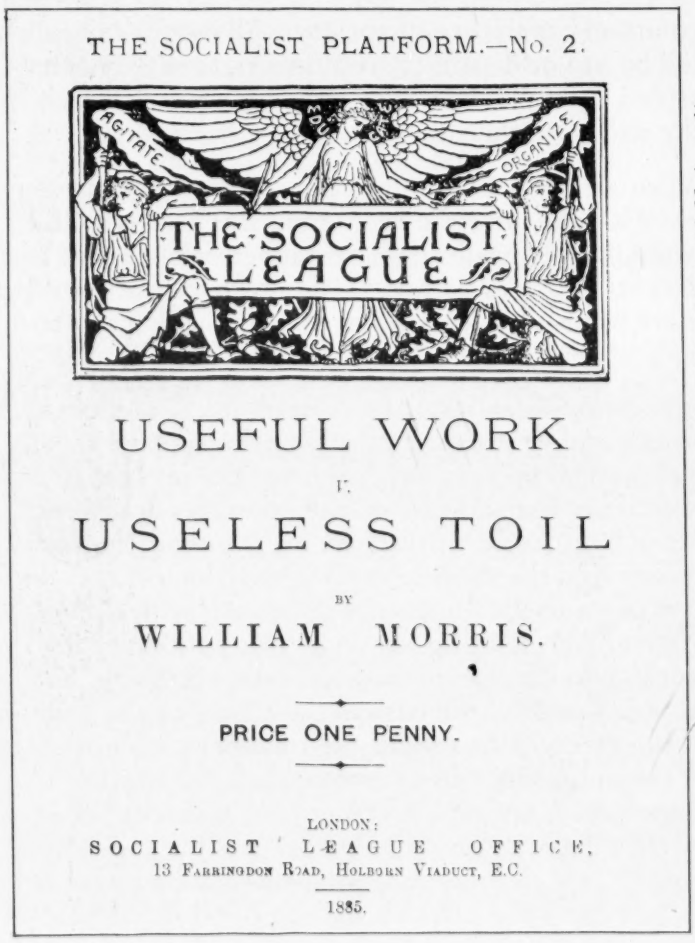
You can see all this in Morris's own work. He was a talented painter, for instance, but he chose to decorate walls and furniture, not framed canvas. He liked to perform each stage of creation. When he found few fabric colors to his liking, he taught himself how to dye. He learned fancy embroidery by taking out the stitches on medieval jerseys. Art was the *doing* of something as well as the thing produced.

Morris considered himself lucky and unusual, and that was precisely the problem. Under capitalism, he said, art would remain uncommon, often abstruse. It had to be so: workers had no control of their work, products were duplicated makeshift, and neither producer nor consumer could lead the vigorous, unworried lives needed to cultivate the senses.

WHAT HE WANTED

MORRIS PAINTED a vivid picture of an ideal society which, as a good Marxist, he called communism. He anticipated a transition period of blunders and slow progress that would follow a socialist takeover (more on that later), but he kept faith that "equality of condition" would usher in the greatest age of history.

Unlike most Utopias, Morris's ideal was not a mechanical paradise that relieved people from challenge and exertion. The opposite: life would be vigorous and personalized. Simple, productive work would be the


THE SOCIALIST PLATFORM.—No. 2.

EDUCATE AGITATE ORGANIZE

THE SOCIALIST LEAGUE

USEFUL WORK

V.

USELESS TOIL

BY

WILLIAM MORRIS.

PRICE ONE PENNY.

LONDON:
SOCIALIST LEAGUE OFFICE,
13 Farringdon Road, Holborn Viaduct, E.C.

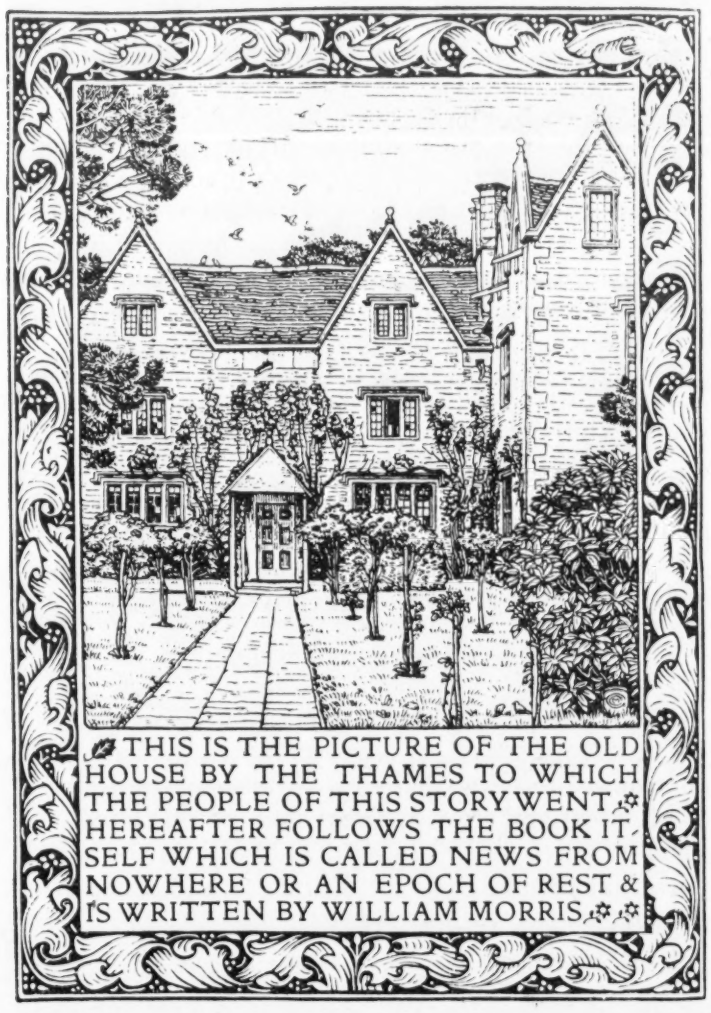
1885.

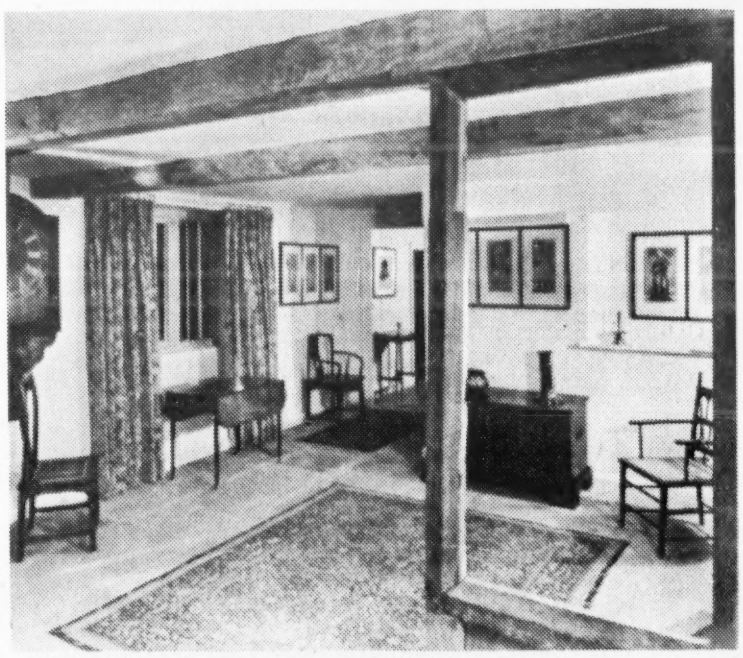
Photographs by Barry Donahue, Fogg Art Museum, Harvard University

Morris's most famous pamphlet, one of many he churned out for the Socialist League in the 1880s.

The difference between Useful Work and Useless Toil is that Useful Work has *hope*: hope of rest without anxiety; hope of a useful product; and hope of pleasure in the work.

*Morris was a man of his time on women's issues. He never used feminine pronouns to indicate human beings. I hope readers will excuse him.





The North Hall at Kelmscott, Morris's home for the later part of his life. He practiced what he preached. Of this house, Bernard Shaw wrote: "Everything that was necessary was clean and handsome: everything else was beautiful and beautifully presented."

Frontpiece for *News from Nowhere*, Morris's "prose romance" of what life would be like in the 21st Century. Morris designed the typeface and the border. The drawing, by G.M. Gere, is of the house at Kelmscott.

common experience of society. All people not limited by age or disability would work to satisfy themselves; if they didn't, they would have no claim to the work of others.

When we think of communism today, the image may be of a tight-run state economy. But Morris's ideal, while fiercely egalitarian, demanded self-reliance and decentralization. It was a vision of apparent paradox: more producers, less production; individualism, but no dominance.

It begins with an idea of contentment. Happiness, Morris said, consists of "the pleasurable exercise of our energies and the enjoyment of the rest which that exercise or expenditure of energy makes necessary." For the rest to be restful, the exertion must be satisfying. And the most rewarding exertion of all is taking care of yourself, sometimes in concert with others, often alone. Finding out what you want and then working to satisfy yourself is a demanding job, but it's necessary for the basics. "My ideal of the society of the future is first of all the freedom and cultivation of the individual will . . . shaking off the slavish dependence, not on other men, but on artificial systems made to save men manly trouble and responsibility: and in order that this will may be vigorous in us, I demand the utter extinction of all asceticism. If we feel the least degradation in being amorous, or merry, or hungry, or sleepy, we are so far bad animals, and therefore miserable men."

No asceticism, but no luxury either. Luxury, Morris said, is a symptom of discontent with the earth itself, a "warping of the natural beauty of things." Free men and women will seek simplicity because they will find that "the true secret of happiness lies in the taking of a genuine interest in all the details of daily life."

Simplicity does not imply uniformity, for differences in temperament and inclination will make for a variety of goods and activities. People will lead simple lives because they will discover that only simplicity can be savored, and that, in any case, freedom demands it.

It may be worth emphasizing what Morris was saying: equality and frugality are interdependent. It's a truism that preachers of simplicity come from affluence; in a competitive society only the successful can realize the shallowness of extravagance. Morris wanted to short-cut the process. He believed that general simplicity of living required a social compact that ruled out great disparities in wealth, and thus minimized envy and insecurity. In his world, no one could work "for" anyone else: all surplus value would be communal.

Under these circumstances, Morris said, art would flourish. "Labor would be expended on things worth doing, and it is a fact past discussion that as soon as things worth doing are made, the intellect, the skill, the artistic feeling of the makers are called out by their production; in a word, they exercise men's pleasurable energies, and therefore make them happy. Such wares as this are works of art."

Since people would want to meet many of their own needs, and since most people like variety, there would

be much less division of labor in Morris's communism. Instead, individual work lives would themselves be divided. Workers would master two or three different crafts, with rough work interspersed. If the community needed some mechanical or repetitive slogging to be done, the work would be carried out by people who either would be in the mood for it or would simply assume the voluntary habit of dedicating some of their time to the commonweal. If the work were so unattractive that neither taste nor conscience would suffice, then the hell with it, Morris said: let it go undone.

In keeping with his disdain for "vicarious living," Morris presumed that the few functions of government would be localized and direct. "(I feel that) it will be necessary for the unit of administration to be small enough for every citizen to feel himself responsible for its details, and be interested in them; that individual men cannot shuffle off the business of life on to the shoulders of an abstraction called the State, but must deal with it in conscious association with each other." Morris feared that a centralized, urban culture would tend to shield its citizens from their own appetites and responsibilities, and the result would be a dull, mass-market sameness. "Variety of life is as much an aim of true Communism as equality of condition, and nothing but a union of these two will bring about real freedom."

The glue of this new society – it's governing principle and shared value – would be what Morris called *fellowship*. It's a hard term to pin down, a mixture of the charity Saint Paul talked about with the men-at-arms comradeship of a pre-civilized tribe. Love of neighbor, to be sure, but also a recognition of kinship and common fate.

Again, Morris's work provides some background. Most of his famous epic poems describe noble quests. Their characters are wandering pilgrims, bound to each other by a love that emerges from common purpose. His translations – the Odyssey, the Aeneid, the Icelandic Sagas – cover similar ground. In his decorative art, Morris always worked in harness, both with designers and hand laborers. He was sad that class background limited his circle of friends; he envisioned a fellowship of the whole society, where we could all trust ourselves and shake off that timid anxiety that Morris abhorred.

In Morris's ideal world, fellowship could operate both as a catalyst for daily life, giving purpose to all kinds of work, and as an eternal principle. It would take something of the role that Christianity played in medieval society – a unity of assumptions – but in a tactile, immediate way, with no postponement of justice.

This spiritual dimension is what distinguishes Morris's fellowship from conventional ideas of brotherhood. "Fellowship is heaven," says the hero in a famous Morris romance, "and lack of fellowship is hell." Fellowship is eternal, looking forward and back. We must cherish both ancestors and descendents; honor tradition and keep up a home for the children. There is a central idea of legacy here that anticipates the revival of the notion that we are stewards of this planet, morally bound to keep it thriving.

HOW TO GET THERE

AT THE BEGINNING of the lectures in which Morris presented his vision of improvement (lectures with giveaway titles like "A Factory as it Might Be"; "The Society of the Future"; "How We Live and How We Might Live"), he generally filed a disclaimer. For example: "We Socialists have not set ourselves to build up a system to please our tastes . . . It would be futile to map out the details of life in a condition of things so different from that in which we have been born and bred."

What he *was* sure of, Morris said, was that a socialist revolution would put the realization of his ideals

"Marigold" wallpaper. "Above all things, avoid vagueness; run any risk of failure rather than involve yourself in a tangle of poor weak lines that people can't make out. Definite form bounded by firm outline is a necessity for all ornament." Maybe a little narrowminded (what about Oriental prints?), but a useful corrective to the feeble stuff of his own day.

work which would be irksome to do by hand is done by immensely improved machinery; and in all work which it is a pleasure to do by hand machinery is done without. There is no difficulty in finding work which suits the special turn of mind of everybody; so that no man is sacrificed to the wants of another. From time to time, when we have found out that some piece of work was too disagreeable or troublesome, we have given it up and done altogether without the thing produced by it. Now, surely you can see that under these circumstances all the work that we do is an exercise of the mind and body more or less pleasant to be done: so that instead of avoiding work, everybody seeks it: and, since people have got defter in doing the work generation after generation, it has become so easy to do, that it seems as if there were less done, though probably more is produced. I suppose this explains that fear, which I hinted at

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A page from *News from Nowhere*. Text, type and layout by Morris. Morris reintroduced what has been called the "architectural concept of the book."

The news from *News from Nowhere* is encouraging. A character tells us that "all work is now pleasurable; either because of the hope of gain in honor and wealth with which the work is done, which causes pleasurable excitement, even when the actual work is not pleasant; or else because it has grown into a pleasurable *habit*, as in the case with what you may call mechanical work; and lastly (and most of our work is of this kind) because there is conscious sensuous pleasure in the work itself; it is done, that is, by artists."

within reach. "The abolition of private ownership in the means of production and exchange" was the key demand of all socialists, he said. "We are all prepared to accept whatever consequences may follow the realization of this claim."

It bears noting that Morris assumed that public ownership of capital, "the destruction of privilege," and "the collective authority of the majority" would all go hand-in-hand. If only.

In any case, Morris was under no illusion that the change would come quickly. The necessary class revolution would be preceded by ". . . a long period of half-formed aspirations, abortive schemes, doubtful experiments, and half and half measures interspersed with disappointment, reaction and apathy." This preliminary stage would be essential for the training of worker-leaders and the development of class consciousness. Genuine revolution, Morris said, must be adamant and well-informed. It would succeed only when sufficient members of the working class demanded the abolition of monopoly and the establishment of equality of condition. If that could be accomplished by peaceful means, fine; if not, so be it. "We must not say 'We must drop our purpose rather than carry it across this river of violence.' "

Let's assume, as Morris did, that collective ownership would necessarily imply a society of equal producers with "due opportunity free to everyone for the satisfaction of his needs." There would be an immediate and radical social improvement, according to Morris. But there would also be mistakes and disappointments as men and women slowly learned to shake off old habits. Especially at first, there would have to be a collective authority which would be prepared to "coerce people not to coerce." The machinery of this authority is what is often called socialism. "All genuine Socialists admit that Communism is the necessary development of Socialism," he wrote, ". . . but I think it quite probable that in the early days of Socialism the reflex of the terror of starvation, which so oppresses us now, would drive us into excesses of utilitarianism . . . So that it is not unlikely that the public opinion of a community would be in favor of cutting down all the timber in England, and turning the country into a big Bonanza farm or a market garden under glass."

It would all sort itself out in time. The necessary first step would be attainment of real leisure. The labor-force would be increased by the elimination of unemployment and by the assimilation of the non-productive classes (Morris hadn't bargained on bureaucracies or "service" industries). Machinery would at last be used as real labor-saving devices, and new machines would be built without regard to the skewed requirements of profit. People would gradually free themselves of the fear of deprivation. They would find that they could enjoy decent material lives and ample leisure at the same time.

The people could ask themselves what "they really want to do." At first, Morris presumed, they would just want to do less work. But of course in the Morris scheme of things, good rest requires good work. Workers would begin to beautify their factories and shops and seek ways of making work downright enjoyable. As the demand for frivolous objects diminished, people would try their hand at new and useful skills, and discover their own aptitudes and limitations. It

would take time, and a lot of self-examination. But eventually workers "would set aside their machines in all cases where the work seemed pleasant or desirable for handiwork; till in all crafts where production of beauty was required, the most direct communication between a man's hand and his brain would be sought for." Popular art would emerge. The making of beautiful things would enrich the "mood of energy"; the contemplation of beautiful things would add dimension to the "mood of idleness." "The elaboration of machinery, I say, will lead to the simplification of life, and so once more to the limitation of machinery."*

Government authority would become simpler and more flexible as people conquered their fears of domination. When communal decisions were required (to build a bridge, say), the citizens would probably meet in something akin to tribal councils. But by and large, there would be little need for formal decision-making, much less for a code of law. The society would be one of shared circumstances and shared values. There would doubtless be conflicts (Morris assumed that people will always be fighting over sex), but they would be utterly personal, with no political overtones, and susceptible to informal mediation by neighbors. Fellowship would provide the real law of the land: "I am not pleading for any form of arbitrary or unreasonable authority, but for a *public conscience* as a rule of action."

SECOND THOUGHTS

THE POWER of Morris's ideology may be limited by his personality and tastes. He was no-nonsense and hard working. He couldn't stand subtlety and over-refinement. So maybe it's not surprising that his writing lacks some analytic consistency. His arguments, as Raymond Williams said, are very often "generalized swearing." Connections which Morris said were axiomatic – collective property to equality of condition to fellowship – seem difficult instead.

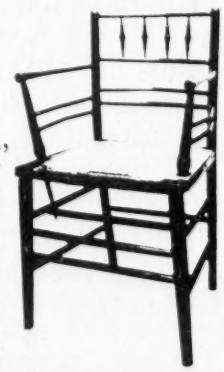
Morris also tended toward myth and idealization. He preferred Gothic art to modern portraiture, and ancient sagas to the realistic novel. His own poetry and fiction portray no complicated individuals, only characters with assigned virtues. He loved the old-time warriors whose works he translated, men free of ambivalence and full of communal purpose. Morris was drawn to the promise that socialism could make us all stout comrades; he had no use for close investigation of personalities, assuming that all types of human temperament could be reconciled in the appropriate environment. Maybe he was right in believing that a voluntary communism of fellowship could become habitual. But psychology, religion, and twentieth century history have persuaded a lot of people that evil is adaptive and various. It may be our fate to require checks and balances. Morris is more optimistic.

He can seem dogmatic on the drawbacks of mass production. Granted that many of the products of his day and ours are pretty ugly; granted that we are mugged by a market of sham needs and wastefulness. But who doesn't have factory-made favorites? I like my blue jeans, I like my bicycle, and I think the cups and saucers from Woolworth's look very fine. There's utility and beauty. We may have lost touch with the art of medieval weaving, but neither did Morris anticipate the esthetics of a ball bearing.

Still, the man overwhelms criticism. His legacy is powerful because it *does* come from personal life, his and ours. He had a rock sense that privilege is wrong. To those who agree, Morris's insistent rage on the question, his impatience with sophisticated argumentation about it, remain very moving.

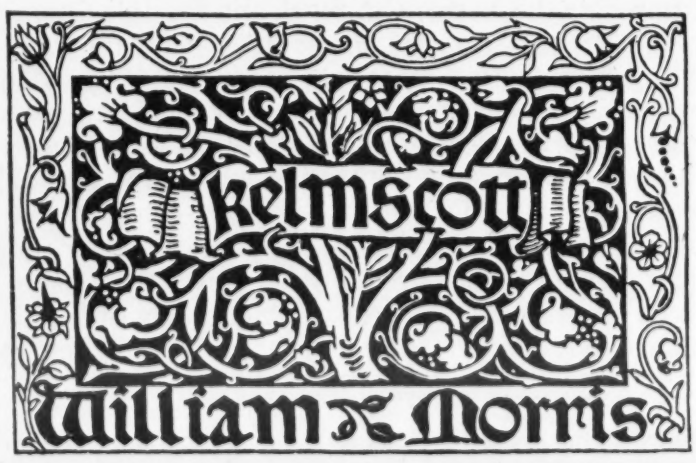
And who hasn't been happy doing what Morris said would make us happy? Working hard at things we want to do, savoring the rest and satisfaction that follows, making something beautiful for friends. Feeling useful in a useful cause. Morris took the experience of human happiness and tried to systematize it. It's not a bad approach.

Morris has been called a visionary, and rightly. But he was no escapist. You have to work and you have to take care of yourself in this world, and Morris insisted we live at full-tilt and meet things head on. "Take trouble," he said, "and turn your trouble into pleasure: that I shall always hold is the key to a happy life." ■



The "Morris Chair."

*Morris was careful not to describe just what an "Art of the People" would look like. He would say only that he presumed that truly popular art would use nature as its inspiration and would appeal directly to the senses. He made no claim for his own work as any kind of prototype.



Morris's colophon for the Kelmscott Press.

RECOMMENDED READING

By Morris

Selected Writings and Designs, edited by Asa Briggs ($5.50, Peter Smith).

Signs of Change (lectures on society, out of print, try your library)

News from Nowhere (a utopian romance, out of print).

About Morris

William Morris: His Work and Influence by A. Clutton-Brook (out of print).

William Morris: Romantic to Revolutionary by E.P. Thompson ($4.50, Penguin).

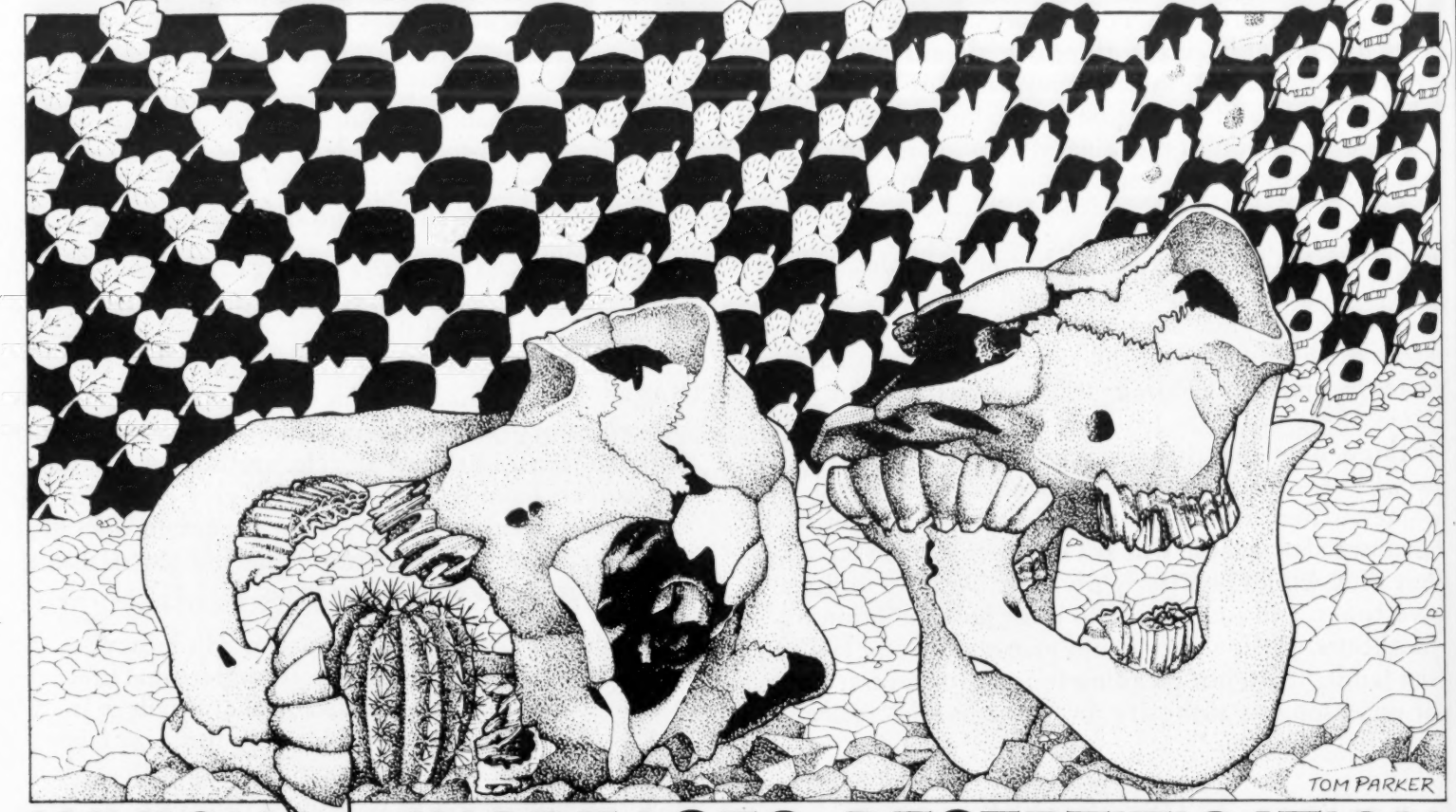
William Morris: His Life, Work and Friends by Phillip Henderson ($8.95, CHR Classics).

For Scholars

Collected Works of William Morris (out of print)

William Morris: Artist, Writer and Socialist (all his speeches, annotated by his daughter May).

INCREASING DESERTIFICATION CHANGES THE WEATHER,



WHICH INCREASES DESERTIFICATION

THE REVERSE PROCESS ALSO WORKS.

BY PHILIP STEWART

A man lights some twigs, and the forest burns. Over the years, his flocks graze on the slopes that he has cleared, and keep the grass from growing dense. With each rainy season, the ravines spread farther and carry more soil away. Instead of being stored in the ground and used by plants, more and more rainwater rushes out towards the sea. Finding less water to evaporate, the sun's energy serves more to heat the surface and the air above it than to do its old work of lifting water vapour up to form clouds. In the hot, dry air, the remaining vegetation struggles to survive, and is easily reduced still further by the pressure of grazing. The sons of the man who lit the twigs have to find fresh forest to burn.

The most alarming aspect of this true story is the quantity of energy involved. One year's sunshine is equivalent to about a megaton of TNT per sq. km. The consequence of erosion is to ensure that little work of evaporation is done before this energy is degraded into heat, and to shift the initial heating effect down to the ground from the level where water vapour gives up its latent heat and forms clouds. Man's action on the atmosphere has thus been in the giga-ton range for thousands of years, ever since he learned how to make fire and to herd animals.

Scientific orthodoxy has long held that we cannot have had more than slight effects on climate because our activities are so puny compared with the global circulation of the atmosphere. This is like saying that a man is not strong enough to lift an aeroplane; the answer being of course that he can, if his hands are on the controls. Small amounts of energy fed into one part of a machine can change the pathways of huge quantities in other parts, and can throw it into a new mode of operation that carries on stably by its own momentum. By learning to alter the earth's surface, man perhaps found a switch for the weather machine.

In recent years there have been signs of a change in scientific opinion. Dr. Joseph Otterman (1974), comparing the Negev with Sinai, and Dr. Jule Charney *et al*, (1975), comparing the actual state of the Sahel with a hypothetical more vegetated state, have found evidence for a mechanism by which overgrazing may cause a marked decrease in rainfall. They attribute this not to changes in the storing and evaporation of water, but to the fact that a bare, light-coloured soil or rock reflects back into space more of the incoming light than a surface covered with plants. (It remains to be seen how far a decrease in cloud may offset the increased reflectivity of the surface.) By a process that

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Philip Stewart is with the Forestry Department of Oxford University, England. He sent a copy of this article to Gregory Bateson, who sent it to us, who . . . It is reprinted by permission of the **Commonwealth Forestry Review**, *11 Keble Road, Oxford, United Kingdom. Readers of* **Dune** *will recognize an argument here, one that lifetimes can be organized around.*

–SB

is still partly the subject of learned dispute, this loss of energy is thought to reduce rainfall locally: deserts may be deserts in part because, paradoxically, they do not absorb enough sunshine, though the fact is masked by the shifting of the sun's heating effect down from cloud level to ground level.

These are the first reputably argued cases of a regional effect of man's action on the climate, coming after a long series of studies that proved the failure of small-scale deforestation or reforestation to cause measurable changes in rainfall. However, they do not assume or imply any alteration in the overall quantity of rain: less for Sinai means more for the Negev. Taking a global point of view, though, it seems probable that erosion has caused the total rainfall to decline, since precipitation must in the long term be equal to evaporation, which has indisputably been reduced on the continents, and since the spread of deserts has lessened the amount of solar energy absorbed and fed into the weather machine to keep it turning.

Some idea of the scale of man's impact may be obtained from considering that at least half of the world's unfrozen land area has been seriously affected by overcropping, overgrazing and erosion (to take an optimistic view). This implies a reduction of evaporation and of energy absorption over perhaps one-seventh of the planet's surface. In the Northern hemisphere the proportion may well be a quarter, since it contains two-thirds of the land and nine-tenths of the people, and this is significant, since the atmospheric circulation of each hemisphere is almost self-contained. It does not seem far-fetched to guess that man has reduced rainfall over the Northern continents by about a fifth. (That this is by no means the only cause of aridity is nicely illustrated by the case of Australia, which has always been the driest continent, though far from the main regions of human settlement and until recently only lightly occupied.)

It is one thing to suppose an overall decrease in rainfall, and quite another to calculate how it may have been distributed geographically and to extricate these changes from all those that have other causes. An intuitive model suggests that the effect would be most intense in and around major areas of erosion and would decrease progressively with distance at a rate that would depend on the topography and on the direction of prevailing winds. The first areas to be heavily eroded were those that had a climate with a long dry season, allowing easy destruction of the vegetation, north and south of the limits of the chain of natural deserts that already ran from Mauritania to Mongolia. As these lands turned to desert, in a process that historians have been able to record, the zones of dry-season climates moved outwards, speeding erosion in new regions.

Today deforestation, overgrazing and erosion are going on faster than ever over most of South Asia and Africa and much of Latin America, threatening the future agriculture and forestry of dozens of countries. The peoples who live in more fortunate lands would be wrong to feel safe, for, quite apart from the human suffering and the political dangers, there is the risk of a climatic catastrophe that could engulf the whole planet. We only have one atmosphere.

There is no technical problem in stopping erosion, remaking the plant cover, and, in the long term, restoring the soil. In many cases grazing control is all that is needed for the vegetation to revive. Where the soil is mostly gone or badly compacted it may be necessary to use heavy machines – rooters or rippers – to prepare the ground. On steeper slopes contour earthworks are required to slow down and canalize the run-off of rainwater, and such watercourses as are retained need to be specially treated to prevent torrential flow. All this can be done at a cost ranging from a few dollars to a few hundred dollars an acre for the maximum treatment. The resulting increase in rural production would amply repay the capital outlay, and the creation of employment would compare very favourably with that obtained by investment in industry, where one work-place can cost many times more than in the countryside.

Unfortunately there are very grave social and political obstacles to ending erosion. Essentially, what is at stake is freedom to use land by the means and for the ends chosen by its owners. There may also be a fear of confiscation or even of expulsion, especially where the government proposes to spend money creating earthworks on privately owned land. In many places, the number of animals and hence the pressure of grazing is increased by the fact that they are the main form in which wealth is held, or by their religious importance, as in the case of the sacred cows of Hinduism or the sacrificial rams of Islam. In some of the countries worst affected, action is rendered more difficult by an unsatisfactory system of land tenure, by political tensions between regions, or quite simply by a lack of social integration between towns and country. To overcome these obstacles it would be necessary to place extensively used land very much higher in government priorities and to carry out major campaigns of education and persuasion, with a personnel that has yet to be found and trained.

The first necessity is to alert the public and governments to the scale and urgency of the problem. Our city-centered cultures teach us that the "energy problem" is how to keep our factories turning and our cars running. If solar energy is thought of at all, it is as a possible alternative to more convenient sources of electricity. And yet the sun pours energy on to our planet in quantities that dwarf all the rest; and the natural face of the land is our largest sun trap, far greater in area than any artificial ones we can ever hope to build. By remaking the cover of soil and plants we could mend the mightiest of earth's engines, for the good of all life. ■

REFERENCES

1. Calder, N. (1974) *The Weather Machine.* B.B.C. Publications.
2. Charney, J. et al. (1975) Drought in the Sahara: A Biogeophysical Feedback Mechanism. *Science* 187, 434-5.
3. Charney, J. et al (1977). A Comparative Study of the Effects of Albedo Change on Drought in Semi-Arid Regions, *Journal of the Atmospheric Sciences* 34 (9), 1366-1385.
4. Otterman, J. (1974) Baring High-Albedo Soils by Overgrazing: A Hypothesized Desertification Mechanism. *Science* 186, 531-3.
5. Potter, G.L. et al. (1975) Possible Climatic Effect of Tropical Deforestation, *Nature* 258, 697-8.
6. Ripley, E.A. (1976) Drought in the Sahara: Insufficient Biogeophysical Feedback? *Science* 191, 100-2.

Land Use

The Vegetable Garden

This reprint of the 1885 English translation of Madame Vilmorin's classic from the 1860s is a monumental work. The format is cold and temperate climate vegetables from A to Z (in this case, Alexanders to Yams), complete with engraved illustrations, descriptions, and extensive cultural information. The detail is astounding, and can only have come from a vast personal experience (Madame Vilmorin was the wife of the founder of one of the oldest seed houses in the world). Not everyone may want or need 56 pages devoted to peas (for example), but for the serious or inquisitive gardener, this book is a treasure.

—Richard Nilsen

The Vegetable Garden
Mme. Vilmorin-Andrieux
1978; 620 pp.
$13.00 postpaid
from:
The Jeavons-Leler Press
855 Clara Drive
Palo Alto, CA 94303

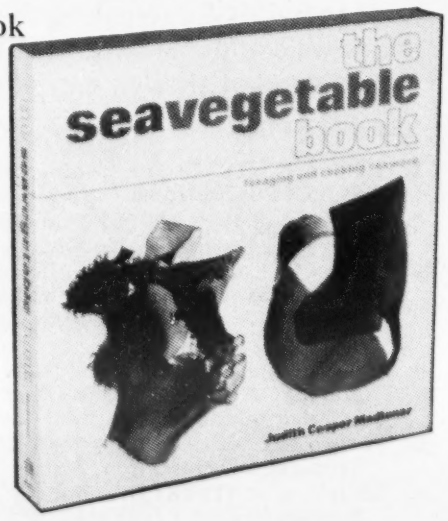
It may be said that the cultivation of the Cauliflower is one of the most simple processes, and, at the same time, one of the most difficult to carry out well. In fact, with the exception of the spring Cauliflowers, which are sown in autumn and wintered under frames, it is grown as an annual, which is sown in the spring in the open ground, and yields a crop in the course of the same year, without requiring any attention whatever except frequent waterings. But, on the other hand, it is certain that, in order to obtain a fine crop, the cultivation of the Cauliflower requires a certain amount of skill and tact which no mere cultural directions can supply. The "head" will not be regularly formed unless the growth of the plant proceeds rapidly and without any check from beginning to end, and the greatest watchfulness and most assiduous care sometimes fail to insure this.

The Seavegetable Book

Attention all coastal peoples. The tidal zone is filled with food. But, for some reason us people have not learned to eat and to care for the ocean's edge. This is the book I have always wanted: foraging; cooking; recipes; folk names from England, Scotland, Japan, China, Russia, the United States; uses; nutrients; commercial sources; fine line drawings; habitat; gel and special things to know about varied North American coasts. Seaweed like it was warm homemade bread.

—Peter Warshall

The Seavegetable Book
(Foraging and Cooking Seaweed)
Judith Cooper Madlener
1977; 288 pp.
$6.95 postpaid
from:
Clarkson N. Potter, Inc.
Crown Publishers
One Park Avenue
New York, NY 10016
or Whole Earth



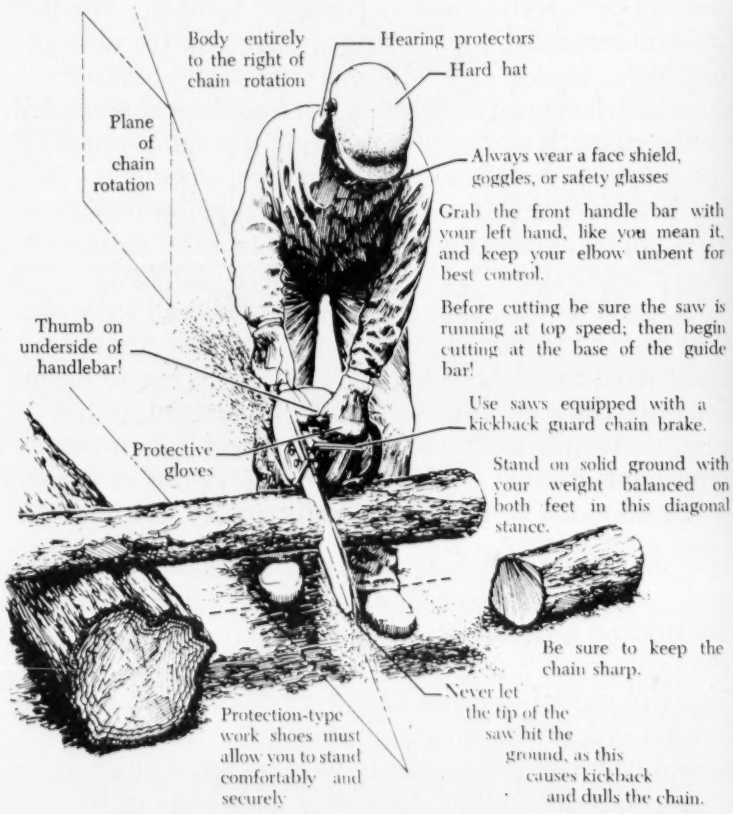
Barnacle Parp's Chain Saw Guide

Barnacle Parp is Walter Hall's nickname in logging circles. Walter Hall is an editor of the Denver Post, has written five books of poetry, and was recently Writer-in-Residence with the Iowa City Arts Council. Barnacle Parp loves chain saws, and seems to know everything about them. In fact, Hall/Parp plans to open a chain saw shop in Boulder, Colorado. But more important, this is one of the few books since John Muir's How to Keep Your Volkswagen Alive *(CATALOG, p. 248) that is really useable by the compleat idiot (beginner). This book is worth its price.*

—Drew Langsner

Barnacle Parp's Chain Saw Guide
(Buying, Using, and Maintaining Gas and Electric Chain Saws)
Walter Hall
1977; 257 pp.
$7.95 postpaid
from:
Rodale Press, Inc.
33 E. Minor
Emmaus, PA 18049
or Whole Earth

If you're a woman who went back to the land with someone who finds it difficult to lace his shoes in the morning, you certainly need a chain saw. After you use it to cut the first decent wood supply since you arrived, you can use it to wake him up and chase him out. And that's the only violence in this book.



Leucaena: New Forage and Tree Crop for the Tropics

The soybean was the wonder crop of the 1920s; Leucaena is making a bid for the '80s. It's a little poisonous to animals and people, but not if eaten in a balanced diet. Cattle love it so much they don't want to eat anything else. But Leucaena's hidden value is that it can help reforest the denuded tropics and still provide forage for cattle. Since it's a legume, it even puts nitrogen in the soil and enables bigger trees to grow all around it.

—Rosemary Menninger

Leucaena: New Forage and Tree Crop for the Tropics
Philippine Council for Agricultural Research and The National Academy of Sciences
1977; 112 pp.
Free
from:
U.S. Nat'l. Academy of Sciences
National Research Council
Room JH 215
2101 Constitution Ave.
Washington, D.C. 20418

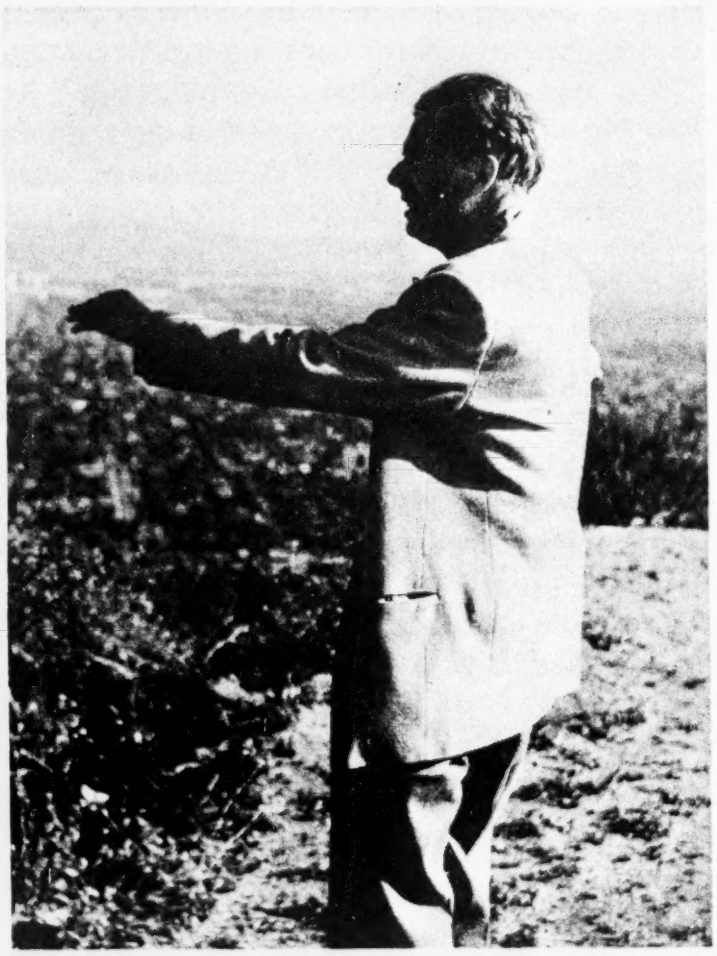
Psychedelics Encyclopedia

As Allen Ginsberg says: "Peter Stafford has an elephant's memory for what happened to Public Consciousness . . ." This is delightful Rabelaisian social history of psychedelics in America (from the 1800s forward). My special favorite is the story of Harry J. Anslinger — the man who convinced the U.S. Government that marijuana was deathly.

—Peter Warshall

Psychedelics Encyclopedia
Peter Stafford
1977; 384 pp.
$7.95 postpaid

from:
And/Or Press
1409 5th Street
Berkeley, CA 94710
or Whole Earth



Humphry Osmond

Aldous Huxley, surveying Los Angeles from the Hollywood Hills, on that May morning in 1953 when the Doors of Perception were cleansed with 400 mg. of mescaline.

The Primo Plant

What a lovely pleasure. The best written book on growing marijuana. Quiet writing with ease and charm. You hardly notice all the attentive experience behind the advice. Very good advice. My one hesitancy — the drawings don't help.

—Peter Warshall

The Primo Plant
(Growing Sinsemilla Marijuana)
Mountain Girl
1977; 100 pp.
$4.95 postpaid

from:
Leaves of Grass Press
Book People
2940 Seventh Street
Berkeley, CA 94710
or Whole Earth

The naturally grown outdoor plant makes its main growth in June, July & August, sometimes growing an inch a day. You will notice that the large leaves usually grow in pairs at even intervals. This symmetry is broken late in summer when the plant grows angled stems with only one leaf per joint. In response to solar decline in mid-August, the plants begin growing flower stems on these newer stems. The smaller, angled flower stemlets, 2-6 inches long, form at each leaf joint. Once the flower stemlets appear, *no* major pruning should be done.

Edible Leaves of the Tropics

Greens are an international staple; they are one of the few foods eaten the world over. In the tropics they eat different leaves than we do — some from trees and vines, many from wild plants that could be cultivated. Leaves of the tropics can withstand hot weather, whereas most of our temperate climate greens burn out. So Texans who like summer greens should read this book.

—Rosemary Menninger
[Suggested by Paul Jackson Editor, Good 'N Wild*]*

Edible Leaves of the Tropics
Franklin W. Martin and Ruth M. Ruberte
1975; 165 pp.
Free

from:
Mayaguez Institute of Tropical Agriculture
P.O. Box 70
U.S. Department of Agriculture
Mayaguez, Puerto Rico
00708

Edible Nuts of the World

My Uncle Ed has been writing and publishing his own horticultural books for nearly half a century. He is known as the "Flowering Tree Man" in Florida where he introduced thousands of species of flowering trees from seeds and starts sent to him by colleagues from all over the world. He later got interested in vines and now in his old age is into nuts. Since nuts supply the oil and protein that keep much of the world alive, he has cataloged and discusses over a thousand nut and seed bearing plants from hemp to cycads (the nuts the dinosaurs ate). The illustrations are fascinating, and his message is that the world needs its nuts.

—Rosemary Menninger

Edible Nuts of the World
Edwin A. Menninger, D.Sc.
1977: 171 pp.
$14.95 postpaid

from:
Horticultural Books, Inc.
P.O. Box 107
Stuart, FL 33494

Ethno-Pharmacology Society

"Getting high" in academic lingo is "the study of ethnopharmacology." The grant-getters and serious students have formed a society (The Ethno-Pharmacology Society, 4181 Brisbane Way, Irvine, CA 92715) and produced a newsletter for historians, ethno-botanists, pharmacologists and drug use (abuse?) specialists. For $5, you can be a member. Looks like a hopeful bridge between the socially concerned and the socially far-out.

—Peter Warshall

Harnessing the Wind for Home Energy
Harnessing Water Power for Home Energy

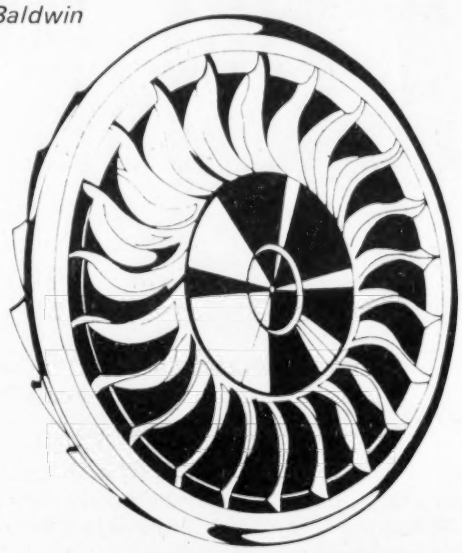
Just when I thought I'd heard the Last Word on such things (and didn't want to hear any more either), there appears two nice little books just stuffed full of information that I was not very familiar with. Even nicer is that these books are exceptionally well edited both artistically and in content. They are especially good for those just getting started. Experimenters will want a more technical treatise, but even if you know it all, these books offer the convenience of having it all in one place, including world-wide sources of equipment. Compared to the turkey offerings from other publishers who should know better, these are a pleasure.

—J. Baldwin

Harnessing Water Power for Home Energy
Dermot McGuigan
1978; 101 pp.

Harnessing the Wind for Home Energy
Dermot McGuigan
1978; 134 pp.

$4.95 each
from:
Garden Way Pub. Co.
Charlotte, VT 05545
or Whole Earth



Turgo Impulse Wheel

Crewdson set out to design a runner which would operate on a reduced ratio and thus increase the speed. The successful outcome of his endeavors was the Turgo, with a minimum runner-to-jet ratio of 4:1. In effect the Turgo runs at twice the speed and is only half the diameter of the Pelton. Therefore the necessity for gears to the generator is greatly reduced, as is the manufacturing cost of the runner itself. It can be served by one or two jets, has an efficiency of over 80% with a high part-gate efficiency and is suitable for use on heads of 40 feet or more. The Turgo is in use all over the world and has established a good reputation for trouble-free operation. . . .

This is a recent and welcome addition to the group of turbines available today. Within its range on medium to high heads it is competitively priced against the Francis and Pelton turbines. Its design and construction is simple, as is the installation and maintenance of the unit. The efficiency of the Hydec is about 80%, which is average for most small turbines. The runner is the Gilkes Turgo Impulse Wheel. The wheel and its casing are both made of cast iron. The shaft is steel and the governor is an oil spring-loaded type which operates a stainless steel jet deflector. The inlet valve is a manually operated butterfly valve. Its output range is from 5 kW under heads as low as 40 ft. up to 150 kW under a head of 350 ft. . . .

To quote an example, a 16.5-in. twin jet unit developing 25 kW on a net head of 40 ft. was recently sold, complete with generator and switch panel, for $19,200.

The Hydec is available from:

Gilbert Gilkes and Gordon Ltd.,
Kendal, Westmorland,
England.

Gilkes was founded in 1856 and they are the oldest manufacturers of water turbines in the world. They have kept a record of every turbine manufactured by them and can tell just what head and flow each was designed to operate under. In fact, they still have the original design for their turbine No. 1, a 4 kW Thomson Vortex, built in 1856, and which operated for over a century. May the same be said a hundred years hence of their new Hydec range.

—Harnessing Water Power for Home Energy

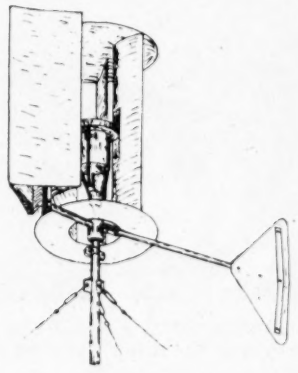
An example of the cheapest type of tower or mast – a telephone pole is used to support an old and heavy Jacobs mill. The 70-ft. pole is tied with guy wires and hinged at the bottom to a concrete base. As a result of the hinge the whole tower, with the Jacobs on top, may be lowered and raised by means of a winch for servicing. It is also good to know that should a hurricane threaten, the mill can "lie low" in safety. The main difficulty with wooden poles is that the portion left underground eventually rots, but with this system that need never happen.

Coulson Wind Electric
RFD 1 Box 225
Polk City, IA 50226
Phone: (515) 984-6038

Roland Coulson sells a wide range of reconditioned wind generators originally manufactured back in the Thirties and Forties, such as the Air Electric, Delco, Parris-Dunn, Wincharger and Windpower. . . .

Coulson powers his workshop with a 1.2 kw Wincharger on an 80-foot tower and a 2.5 kw Windpower on a 65-foot tower. All the workshop equipment is run on 32 volts DC: a lathe, valve and bench grinders, drills, air compressor, vacuum cleaner, radio and lights.

Vertical-axis Electro shown powering a mountain rescue post in the Alps



Elektro G.m.b.H.
St. Gallerstrasse 27,
Winterthur, Switzerland

Elektro, a tiny outfit, has been quietly manufacturing wind generators in Switzerland for the past 36 years and all went well until about 1969 when suddenly everybody wanted to buy Elektros. Reeling under a deluge of mail and orders, the small workshop where Elektros are hand-built became hurried and cluttered. New people were employed who did not understand the fine art of windcraft, and so quality control slipped. About the same time Elektro allowed itself to be pushed into premature manufacture of a 10 kw generator by an English company. The result was that the blades on the first batch of 10 kw mills broke, and Electro's reputation suffered badly as a result.

It must be said, however, that a company expert subsequently personally visited and de-bugged most of the faulty Elektros in Europe. Having recently met Mr. Kern and Mr. Schaufelberger of Elektro, I'm personally satisfied that they have matters back in hand again and are intent upon improving their quality control.

After all that, it should also be said the Elektro has many happy customers. *—Harnessing the Wind for Home Energy*

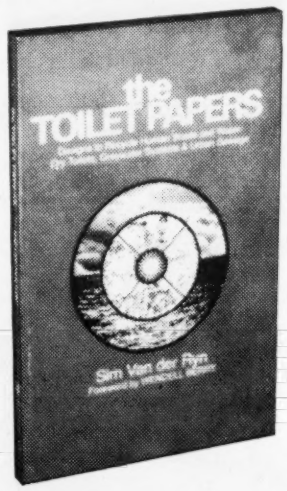
The Toilet Papers

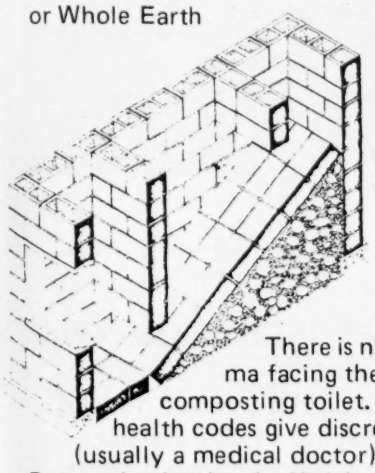
When I first met Sim, the town I lived in was embroiled in Sewage Kung-Fu. State agencies, Federal agencies, County agencies and a split electorate all battling about what should be done with the town's "wastes." I was a crazed evangelist for putting our wastes back on the land. Sim asked what was happening. The town summarized: "Shit's the truth."

Well now Sim is State Architect of California. He is an elegant statesman and educator. He has tried to bring to public consciousness the need and delight in recycling feces, urine and water. **The Toilet Papers** *is his book: a compilation of history, dry toilets, greywater designs and philosophical musings on sewage. The best access book for the newly initiated.*

—Peter Warshall

The Toilet Papers
(Designs to recycle human waste and water: dry toilets, greywater systems, and urban sewage)
Sim Van der Ryn
1978; 124 pp.
$3.95 postpaid
from:
Capra Press
631 State St.
Santa Barbara, CA 93101
or Whole Earth





Design for owner-built Clivus composter.

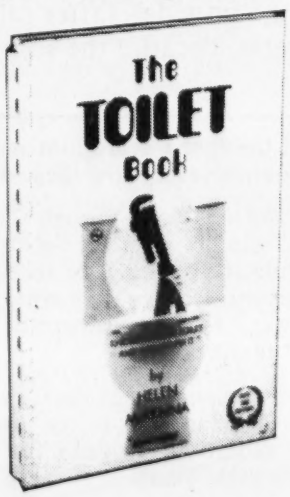
There is no easy answer to the code dilemma facing the person who wants to build a composting toilet. As is true of building codes, health codes give discretion to the local health officer (usually a medical doctor) to accept alternative systems. But, again, few local officials choose to use the authority they have. Proprietary and generic types of composting toilets and greywater systems are now being tested in Oregon, California, and elsewhere. One approach is to request an experimental permit and agree to submit to regular laboratory tests that measure the fecal coliform present in greywater effluent or compost containing human fecal matter. If you are remodeling your existing house, you may not need to apply for a permit at all. Or you can call your concrete block compost privy a "root cellar."

The Toilet Book

If only every fix-it book was as good as this one! Written for the utter dumb-dumb, it explains that porcelain throne in more detail (and with more humor) than most people will believe possible. The book is in its third printing, flushed with success, no doubt . . .

—J. Baldwin

The Toilet Book
(Knowing Your Toilet and How to Fix It — Sometimes)
Helen McKenna
1975; 80 pp.
$3.00 postpaid
from:
A Harmless Flirtation
With Wealth
P.O. Box 9779
San Diego, CA 92109



The Compleat Biogas Handbook

Hoo BOY, is it compleat! The author recognizes that a practical long-lasting everyday use biogas plant hasn't really been done yet, but he doesn't concede that it can't be. So lots of the numbers you need are here, and many hard-won tips are shown from often bitter experience. This book fills a real need, and I am happy to say that it seems to be well executed. Directions for making that mythical generator aren't here, but a good proven learning one is shown. The book's main value is in showing how to do things that have been glossed over or ignored in other books. Such as burning methane in a gasoline engine. If biogas interests you enough to consider making a generator, this book is your next assignment.

—J. Baldwin

The Compleat Biogas Handbook
D. House
1978; 403 pp.
$8.00 ($9 outside the U.S.)
from:
At Home Everywhere
VAHID
Rt. 2 Box 259
Aurora, OR 97002

Sanitation Technology Options

A must for sanitation buffs interested in dry options for excreta disposal, reusing human "wastes," and a comparison of waterborne vs. cartage vs. on-site disposal. This is a bibliography for third-world countries with a clear sense that it's better to improve what already exists than build something "new" just to be modern; it's better to think "reuse" than "disposal"; it's better to think local adaption than universal solution, especially if the universal solution is high-tech.

—Peter Warshall

Sanitation Technology Options
(A Technology Review)
Witold Rybczynski
1977; 319 pp.
write for info from:
Witold Rybczynski
c/o School of Architecture
McGill University
3480 University St.
Montreal, H3A 2A7
Canada

389 McGarry, M.G. Asian Institute of Technology, Bangkok, Thailand

UNICELLULAR PROTEIN PRODUCTION USING DOMESTIC WASTEWATER Thai Journal of Agricultural Science, Thailand. Volume 4. pp. 213-223. October 1971. 3 tables, 2 figures, 9 references.

ALGAE PONDS: DOMESTIC SEWAGE: ALGAL CONCENTRATION: ALGAL DEWATERING: ALGAL DRYING: DIETARY PROTEINS.

Unicellular algae has been grown on a pilot plant scale in open ponds receiving domestic sewage. An overall process of algal harvesting, concentration, dewatering and drying is described. Preliminary experiments reveal that the algae may be used as a dietary source of protein for chickens, swine and cattle.

Methane Generation by Anaerobic Fermentation, An Annotated Bibliography

For those of you still trying to make a methane digester that's practical on a day-to-day basis, and not merely a showpiece that you quietly hide a few months after writing a book about it, here's a bibliography that likely has references you haven't yet seen. It's mid-tech level.

—J. Baldwin

Methane Generation by Anaerobic Fermentation
(An Annotated Bibliography)
Compiled by Christina Freeman and Leo Pyle
1977; 64 pp.
$4.95 postpaid
from:
International Scholarly Book Services, Inc.
P.O. Box 555
Forest Grove, OR 97116

Don't Build a House till You've Looked at This

by Michael Phillips

It can be built by routine contractors, with standard technology and ordinary materials, at no extra cost, and will work at most U.S. latitudes and temperatures. Furthermore, it is completely passive – there are no fans or pumps whatsoever. And the design will work on most configurations of living space.

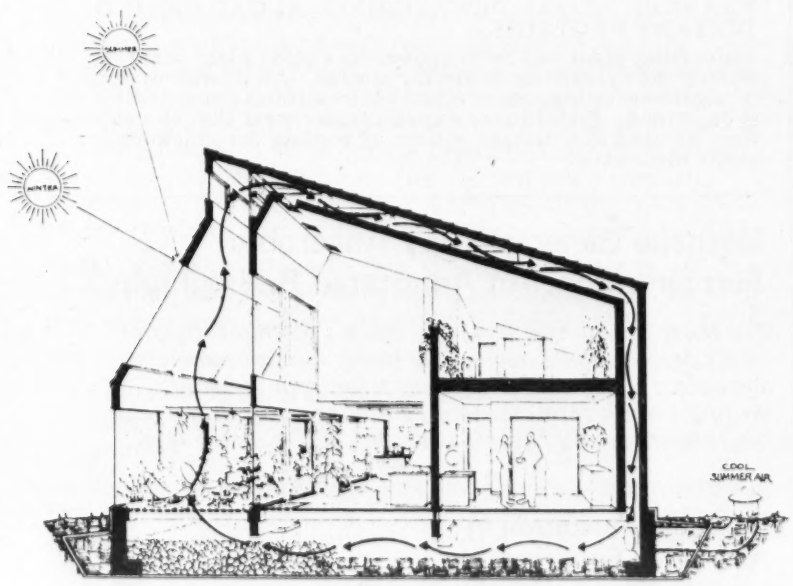
Footnotes by J. Baldwin *Photos by Michael Phillips*

This is the lowest level of technology with the highest return that I have seen. The Kubota/ Smith house is at 7,000 feet on a mountainside overlooking Lake Tahoe. It was built by a local contractor in four months at $31.00 a square foot,[1] less than the standard local cost using standard construction techniques.

I visited the house on March 23, 1978, with Sim Van der Ryn, the California State Architect, and J. Baldwin, the **CQ** Soft Tech editor. We found it nice and warm with only solar radiation as a heat source, despite the fact that it was 8:45 in the morning, snowing outside (as you see in Photo 1), five feet of snow around the house, and the sky had been overcast for the past three days.

The technology is very simple. The house faces south and the south face is double glazed glass. The air heated by the sun rises on the south side to the roof which has a wider than usual space (12" between roof and ceiling) where there is an opening allowing the warm air to move down through the roof rafters to the rear north wall. There it falls directly to the basement crawl space and flows under the house to rise again through the decking in the south face,[2] forming a circle. The main living area of the house is surrounded by a gently moving circle of warm air.

Why does it work? Convection. The sun warms the air during daylight hours; the air expands and rises, drawing in cooler air from under the decking and keeps the circle of air moving. This warmed air heats all the internal mass of the home until nightfall when the air slows or stops and then provides a perfect air insulation blanket to keep the warmth from radiating to the outside[3] (after midnight, the air circulates in reverse, because the south glass wall is the coolest).

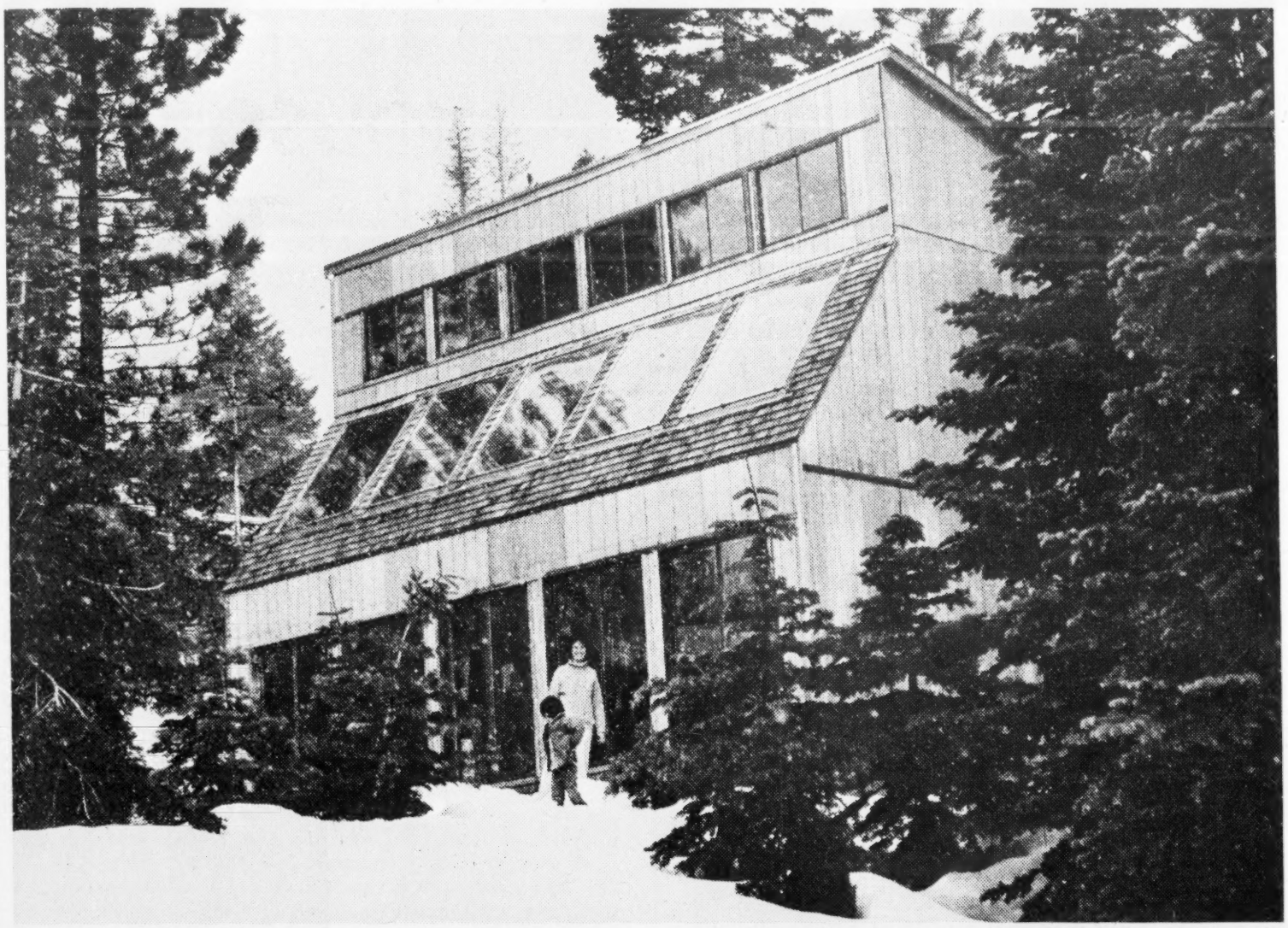


Drawing shows path of heated air: from greenhouse, through double-ceiling, down back of the structure, across rocks in the crawl space and back into the greenhouse. Outside vent at right side draws air in the summertime.

1. I thought I heard him say $29.00 per square foot, which is commendably low these days.

2. The air "rises through the deck" by passing between the 1/4" gap between the deck planks. This gives a uniform circulation over a wide area rather than airflow being concentrated in a duct which would likely require a blower. The eerie silence of the house is one of its best features.

3. Experiencing the draftless silent comfort of this house makes me anxious to try some more experiments with heat radiation. I think "the book" may well have misled us all these years. –JB



The Kubota/Smith Solar House at 7,000 feet, near Lake Tahoe. Snowing at nine in the morning with 5 feet of snow on the ground. Toasty inside.

To me the most interesting benefit of this system is that the air warmed directly by the sun is not the air you live in. The air you live in is warmed by radiation from the house; it can be cooled by opening a window; the humidity is increased by taking a shower. The Kubota/Smith's report that living in the house has been a very different experience from anywhere else they've lived because the air is not heated by a furnace or blown around to keep it near the floor; it's fresh and calm. The minimum temperature for living in the house can be much lower than most people are used to. It was 64° F on the first floor and toasty when we visited. The Kubota/Smith's say that even 59° F is fine because all the floors and corners are warm and there are no drafts. J. Baldwin confirmed this from other experimental work and his own experience at the Integrated Living System domes in New Mexico.

The greatest benefit of this house other than the fact that it works so well, is that it uses standard construction techniques which are in use everywhere in the U.S. Simply described, it is a well-insulated house, with enough roof space and northwall space to allow air to circulate around inside. Although the Kubota/Smith house has rocks in the basement, Tom Smith didn't feel that they were playing much of a role. He felt that backfill (dirt removed while building a basement) might do just as well or better than the rocks which were put in during winter and still hadn't warmed. The house works wonderfully. With some minor changes this house will get even warmer in future winters. Sim and J. agreed that insulation and convection played the main role and that the internal mass of the house was the prime heat storage, not the basement rocks. Both felt that rocks, if

Sim feeling the gentle air current rising from between the floor boards.

others used them, should be coated to avoid fungus and that rocks might turn out to be useful in other more northerly climates.[4]

To me, the best evaluations of the house are the following comments:

Robert Charbonneau, the 28-year-old Tahoe contractor hired for the job: "I'm building five more like it as fast as I can, and three are already pre-sold."

Sim Van der Ryn: "This way of building has a great advantage because it can be used just about anywhere in the United States – even the northernmost latitudes. . . . I'm going to use this approach in the roof of my Inverness home," (which Sim is remodeling).

J. Baldwin: "This should be written up for the **CQ**. I would not have guessed that this idea would work out at all, let alone so well."

Jeff Smith, the 20-year-old local carpenter on the job: "I used to bring my friends here when we were working on the job and tell them it was my house; it was warm inside when we were building it in December."

This low technology has three parents. Tom Smith, the owner who created it after examining solar houses all over the U.S. for his **DO Catalogue** and **Tom's Atlas**; both books he published for the Japanese, describing the current milieu in the U.S. Lee Butler of San Francisco, who was the main architectural advisor on the house and Tom's mentor. And Moto Shiina-san, the head of the Japanese Office of Appropriate Technology. He along with Honda Corporation, financed Tom on this venture. (Sim refers to the Kubota/Smith house as "The Hondamatic.")

Talking as the warm air rises in the area behind the south-facing wall – Tom Smith, owner, and Sim Van der Ryn, California State Architect.

I find it interesting that the Japanese should sponsor a research project of this sort in the U.S. But it is not so strange. Shiina-san understands that many things are more acceptable in Japan if they have been developed in the U.S. or Europe, so he supported this. The next house Tom is building, along with Lee Butler, will be constructed in Japan this summer for an important member of the Japanese Parliament who plans to use it as a guest house for his friends, the major Japanese corporate leaders. (That's how the Japanese Office of Appropriate Technology expects the idea to spread in Japan.)

CQ*'s brilliant technical team – Sim Van der Ryn and J. Baldwin – at the front lines of the solar battle.*

Special considerations: We've only looked at this house in the winter, whether it will successfully cool itself in the summer is not a matter of fact yet. Tom, Sim and J. feel that it will. Tom thinks that venting the air out the top and drawing in fresh air from the basement through buried culvert pipes in the cool soil on the north side will work. Sim thinks shades will be needed and could be installed very easily. ■

Copies of sketches and financial analysis as well as advice are available from:

Tom Smith
P.O. Box 2356
Olympic Valley, California 95731

Lee Butler's company is:

Ekose'a
3375 Clay Street
San Francisco, California 94118

4. The rock storage is not very well worked out. The backfill idea looks dubious to me. –JB

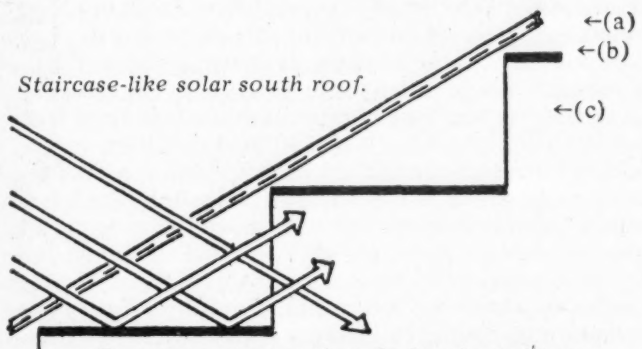
Sun!

This nifty reader saves you from buying (and reading!) about 70 lbs. of books that you'd otherwise need to catch up on all the ideas here. It's a good place to fill in the blanks that follow "Oh yeah, I heard about that guy." Here you have the thoughts of an extraordinary range of minds attending to the solar nexus: Brower, Lovins, Bookchin, Illich, Goodman, Mumford, Grossman, Hayes, Long, Commoner, Georgescu-Roegen, von Arx, H. Odum, Inglis, Lyons, Stein, Shurcliff (especially), Reis, Goldman, Mills, Harding.

—J. Baldwin

Sun!
Stephen Lyons, Ed.
1978; 364 pp.
$2.95 postpaid

from: Friends of the Earth
124 Spear Street
San Francisco, CA 94105
or Whole Earth



Staircase-like solar south roof.

a. Transparent cover that sheds rain and snow.
b. Horizontal reflective sheet of aluminum.
c. Vertical sheet of transparent glass or plastic.

The government has already begun offering inducements to buyers of solar equipment: outright grants, tax cuts, low interest loans. But regulations pertaining to such subsidies usually contain fine print that makes the incentives contingent upon the equipment's meeting published standards. While this practice may encourage purchasing of solar hardware, it is unhealthy in the long run for the young industry. Subsidies contingent on conventionality can only lead to hardening of inventive arteries. *—William Shurcliff*

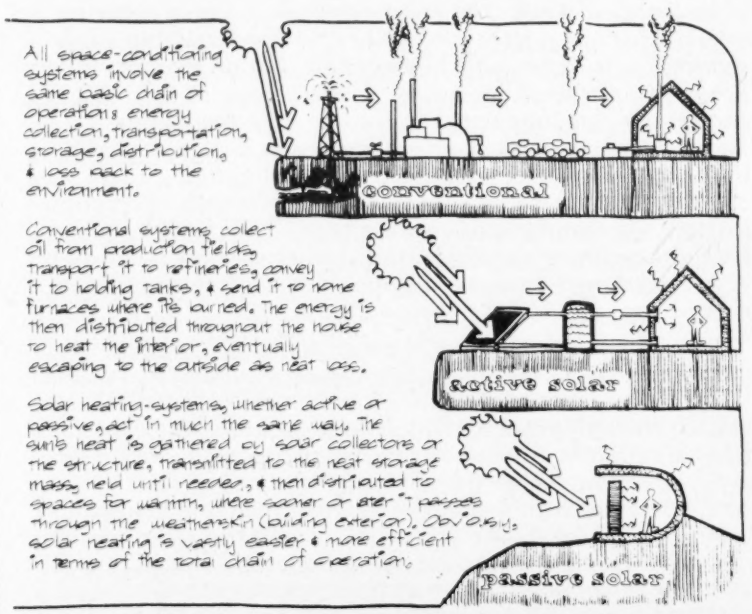
Natural Solar Architecture, A Passive Primer

As you may know by now, "passive" solar is often the best way to go. Fancy and expensive machinery is avoided, resources are saved, and nature does most of the work. Up to now, there has been no complete text on the subject. This book really does the job, which isn't surprising when you note that the author is one of the best known passive solar experimenters. If you are about to construct a solar building, you'd do well to give this a look first.

—J. Baldwin

Natural Solar Architecture
(A Passive Primer)
David Wright
1978; 256 pp.
$7.95 postpaid

from:
Van Nostrand Reinhold Co.
7625 Empire Dr.
Florence, KY 41042
or Whole Earth

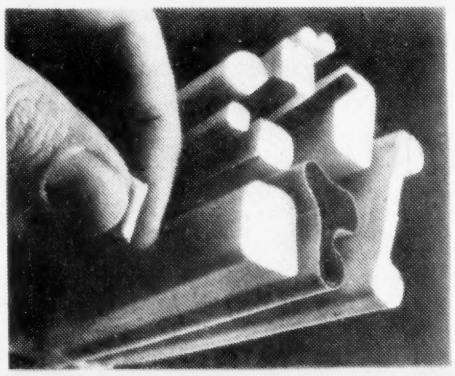


Draft Seals

The save-energy books always tell you to seal around your doors and windows to prevent expensive air leaks. They often show stick-on foam tape, but those who have tried it know that foam tape gets eaten by the sun, and worse, "creeps" away from the place you stuck it. It also can freeze to the frame, effectively welding the opening shut. I don't know if this company's product is any better, but it looks from the catalog that it is a LOT better. I'd appreciate user reports.

—J. Baldwin

Information from:
Schlegel Corporation,
Department A
P.O. Box 197
Rochester, NY 14601

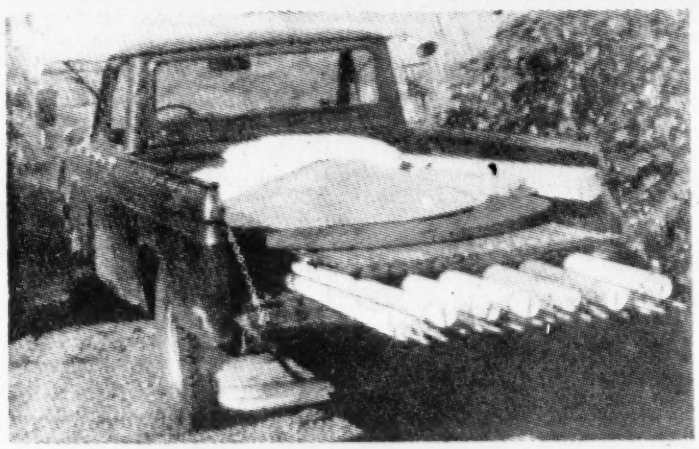


Yurts

Cascade Shelter, Inc. is an extension of the Hoedads, a tree service cooperative about which I wrote in the Summer '76 issue of the CQ. *If you are interested in sturdy, lowcost, portable structures (kit or finished) manufactured by folks who own their own means of production and who are dedicated to the cooperative lifestyle, then ask for their free information.*

—J.D. Smith

Information
Free
from:
Cascade Shelter
4500 Aster St.
Springfield, OR 97477



Our Yurts are designed to be portable. For example, with an eighteen foot Yurt, the longest structural member is a ten foot pole, making the Yurt easily transported in a pickup, van or car with a suitable roof rack. With practice, this type of Yurt can be raised in 1 to 2 hours.

Gerard O'Neill's comments on "Astropollution," continued from p. 51.

of freedom, we can . . . inquire as to the total resources of the solar system." I then argued that a growth rate of 0.2% per year, a tenth of the present world average, would be sufficient to make the difference between stasis and change, and noted after the calculation that "although I do not advocate it, I must conclude, therefore, that there is room for growth at a moderate rate over a time of more than twelve thousand years, should that be desired in every era by the human population then alive."

AP, "Impossibility of Emigration." First paragraph: "An elementary analysis reveals the impossible economics of large-scale emigration from Earth." The author then assumes 100 passengers per shuttle flight, says "assuming an optimistic cost of $20 million per shuttle flight . . .," and comes out with an impossibly high figure.

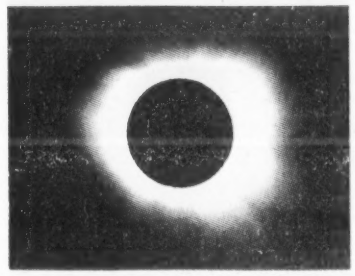
The economics of emigration from the Earth is discussed at some length in THF. Mr. Thompson's error lies in applying a 1970's vehicle system (the space shuttle now within a few months of its first orbital flight) to emigration that would not take place, even according to what I have labelled as an earliest possible time scale, until some fifty years in the future. A corresponding error would have been to conclude in 1905, soon after the Wright brothers' first flight, that commercial trans-oceanic air travel would remain impractical in 1955. In fact, by that year such travel was commonplace, for quite ordinary people, and soon afterward the majority of ocean liners were forced out of business because commercial air travel so dominated the economic scene.

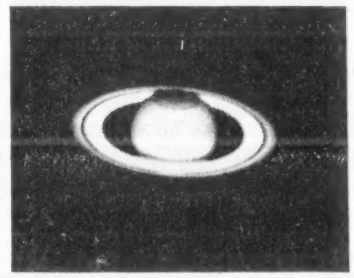
THF Chapter 12, pp. 220-224 considers the emigration question in detail. It takes a worst-case, assuming that in the time-scale of interest the human population might be 10 billion, and rising at 200 million per year. First the construction rate for new colonies is calculated, based on industrial productivity no higher than that of the present time. It is concluded that within about forty years from the firm establishment of space industry new lands could be provided at a rate more than enough to support a population increasing at 200 million per year. The transport question is then considered, and it is concluded that the necessary fleet of orbital ships (built in space) would be about 1100, and that it could be built in less than three years by only 0.1% of the population already in space. No technology beyond our present understanding is assumed.

Transport from the Earth to low orbit is then calculated on the basis of present engineering knowledge, is cross-checked by the experience of present-day commercial aviation, and is double-checked by fundamental energy considerations. The conclusion is that a ticket might cost a few thousand (1977) dollars, and that a fleet of less than 200 vehicles of 500 passenger size would be required. That is only 5% of the number of large jet aircraft in the world fleet at the present time. In the same section it is pointed out that the fuel expenditure per emigrant — based on vehicles of the *present* level of aerospace engineering — would be no more than would be used by the same person in four months of ordinary living here on Earth at present-day fossil-fuel use-rates as they are in the developed nations.

As I then point out (p. 224), "if the traffic to and from space ever reaches the frequency corresponding to the (worst case) example, it will be very important to design the engines for clean-burning fuels, and to pay special attention to the delicacy of the atmosphere's ozone layer. There will be at least forty years of time to study the problem before it will be necessary to solve it . . ."

AP, "Environmental Impacts on Earth." Much of this section is devoted to nuclear reactors in orbit. As I have noted, these play no role in any plans I have worked on. One paragraph then says: "O'Neill's plan for the colonization of space calls for the transmission of energy from satellite solar power stations to Earth via microwave beams . . ." In fact, the development of an industrial capability in space, with its inevitable long-term consequence of a substantial human population located nearby, is quite general; it could be applied to any industrial product whose end use is in high orbit or in deep space. Satellite power stations have been considered only as a likely first major product, but because





they have been dealt with at length in my writings I will discuss them here.

First, far more *good* quality research is needed on microwave effects, and I have emphasized that point repeatedly. AP quotes the "West Bend News," a publication I am not familiar with, on experiments carried out within iron-curtain nations and notes that East-bloc legal limits on microwaves are far lower than present U.S. limits. Indeed, those limits are lower, but they are based on experiments of very poor quality, badly in need of verification. In any case, it is my understanding that present U.S. tentative designs for satellite-power antennas satisfy even the very low East-bloc limits at the perimeter fence surrounding an antenna site. It should be noted that, very much contrary to the situation for nuclear radiation, microwaves can be stopped by a thin layer of household aluminum foil. I would assume that anyone admitted to an antenna site would remain within a vehicle so shielded (the shielding could be constructed in an hour or so at the expense of a few dollars worth of aluminum foil and tape) until passing underneath the antenna, through which the waves would not pass.

I have a greater concern about effects on wildlife, especially birds, but a thorough program of research should answer any questions regarding subtle effects on bird populations. It is worth noting that most of the pollutants we now release into the atmosphere to be ingested by wildlife are the consequence of fossil-fuel burning to yield energy. If we can get rid of much of that by substituting electric heat derived from solar energy in space, I suspect we will have improved the ecological conditions for wildlife much more than any harm done; but again, let's do the research first and get honest answers.

It is one of the necessary evils of our times that a good deal of misinformation is put out along with valid data. An example of such misinformation occurred in a recent series of articles, later turned into a book. The author told of a Finnish town, across a lake from a powerful Russian microwave radar facility. The town's inhabitants suffered an unusually high incident of heart attacks. Subsequently it was found (but not quoted in the book) that the town had made the unfortunate choice soon after World War II of a large quantity of surplus German military piping for its water supply. The piping had a high concentration of heavy metals that leached into the water system, poisoning the inhabitants. The straightforward chemical effect was quite enough to account for the high incidence of heart failure.

A similar piece of misinformation* is quoted by Mr. Thompson in AP, based on a statement by Dr. Frank Drake, of Cornell and the Arecibo radio observatory: "When the microwave beam goes through the temperature of the ionosphere goes up 25 or 30 percent and radio waves are reflected . . . Every taxicab radio will be heard in every taxicab radio in America." Dr. Drake's statement was made in good faith, but had not been adequately researched. In fact, a group from Rice University under the direction of Dean William Gordon had used the Arecibo telescope to check for microwave effects on the ionosphere. In preparation for their measurement, they first calibrated their apparatus by transmitting at a frequency (very different from that of a power satellite) where there was a well-known ionospheric resonance. They detected it, as expected, then switched to the actual power-satellite frequency, where no effect was found. The group from Rice University was rather disturbed, as you can imagine, when they discovered from headlines in their morning papers that Dr. Drake had gone to the newspapers without complete knowledge of the facts. I don't know whether a retraction was ever made or, if so, ever printed.

A few paragraphs later in AP the author states (correctly) that the space-shuttle's environmental impact was studied

*The misinformation referred to here was corrected in the final draft of "Astropollution." —SB

and found to be small at the level of 50 to 60 flights per year. He then says, "This small number of flights probably could not support a full-fledged colonization of space following O'Neill's concept." In fact, our present plans[5] are based on 50 to 60 flights per year, within the existing shuttle traffic model.

A far more serious question of launch-vehicle impact is not discussed in AP. That is the possibility that the satellite-power concept will not be implemented not on the basis of non-terrestrial materials and solar energy for processing, as in the work done under my direction, but on the "brute-force" method so far advocated by aerospace firms who have studied the subject, and by the Sunsat industrial group headed by Dr. Peter Glaser. I have pointed out in testimony before Congressional committees that to satisfy by satellite power worldwide needs for new electric generator capacity in the year 2000 would require the emplacement of approximately two to four million tons of satellites per year, and that the launch-vehicles to raise that much payload from the Earth to synchronous orbit would emit approximately 100 megatons per year of rocket exhausts to the biosphere. That is 2,000 times the tonnage of the shuttle traffic model, so anyone genuinely concerned about environmental issues would do well to push for thorough study of the various alternatives, before plans for satellite power are far advanced. Fortunately, the President's Science Advisor and his staff are aware of these alternatives and of the need to broaden the satellite-power studies, and the launch-vehicle environmental-impact question is being addressed in the studies of satellite power that have now begun. It is by now means a simple issue; many of the conclusions on environmental impact are based on theories that are incomplete and not adequately checked by experiment; again, good solid research is needed, not just a rehash of previous studies. At this time all we know for sure is that a traffic of several million tons of payload into orbit each year would require far more thorough study and understanding than a traffic of 2,000 tons per year.

The author writes of the dangers of nuclear explosions on the Moon, used in mining, quoting Dr. K. Ehricke and the NASA "Outlook for Space" Study Group Report. I am not responsible for either of these statements, and the use of nuclear explosions on the Moon for mining is in fact contrary to all statements I have made on the subject.

In the 5th paragraph of the section, the author expresses a fear that the development of space will stimulate industry on Earth. For the majority of the human population that stimulation is seen as a great need.

AP, "Recycling and Pollution." "Space colonists would have us believe that . . . recycling is bound to be extensively used and hence pollution will be minimized. This is wishful thinking. Although transport costs to Antarctica are high, I saw extensive waste of supplies and no recycling . . . there." The analogy is false. Antarctica is an energy-starved area. Almost all the energy that is used there is based on the burning of fossil fuels, which must be transported to the site at great cost. When both materials and energy are expensive, indeed it does not pay to recycle. In space, on the contrary, materials will be relatively expensive, but energy will be very cheap. Once we are outside the shadow of the Earth, sunlight will be a dependable, full-time resource. It will be especially cheap, as I have pointed out in THF, when it is used directly as heat. In THF Chapter 3, pp. 51-52, I noted that solar energy focussed by mirrors onto a tube containing nitrogen and oxygen could form directly, and at very low cost, the high-energy chemical precursors of the nutrients most needed by growing plants.

AP, 2nd paragraph: "At present the construction and operation of closed ecological systems . . . is beyond our technological capabilities." The early program[5] outlined in A/A '78 does not depend on a closed ecosystem; it requires only a moderate number of people in space, and assumes their resupply from the Earth. But in fact, the Russian development of long-term closed ecosystems is well advanced, and groups of three Russians at a time have spent periods of several months in an enclosure where they grew wheat, harvested it, and baked their own bread. A series of research teams funded by NASA is already studying the problems of understanding closed ecosystems, and they have adopted a tentative goal of 1985 for achieving closure.

AP, "Goals for Conservation." The author makes clear a dedication to a pre-judged set of values by stating "space-industrialization which is growth-oriented must be blocked," and "I fear that if a no-growth economy is not established first on Earth, then resources of space will fuel further rounds of growth." The problem lies in the fact that the author has overlooked the problems of most of the population of the world. In modern times, since the developments of good medical techniques and antibiotics have greatly reduced infant mortality, populations have achieved near-stability only in countries that are industrialized and consequently wealthy. Attempts to achieve population stability while poverty and hunger are still rampant have been notably unsuccessful. In India, for example, where one such program was implemented, it was quite unpopular and was a major issue in elections which threw out the Congress party that had been in office for twenty years. The experience of recent history is that growth rates drop to low values in wealthy, communicating nations by individual free choice. Most of the nations of the world are poor, and don't wish to remain so. They see industrialization as their greatest need, and if we can supply that need by opening for the benefit of all humanity resources of energy and eventually of materials that can be used without damage to our biosphere, we will prevent an untold amount of human suffering. These next decades are the hurdle; if we can reverse the present slide toward more severe worldwide poverty, and over the next century can improve the human condition to levels that are now common in the industrial nations, we will provide one of the most important requisites for a total human population with the freedom from hunger, the leisure, and the education so that all can share our concern for the preservation of the environment. ■

NOTES

1. *1974/75 Princeton Conferences on Space Manufacturing/ Space Colonies*, American Institute of Aeronautics and Astronautics, 1290 Avenue of the Americas, New York, New York 10019, 1977.
2. *1977 Princeton Conference on Space Manufacturing/ Space Colonies*, American Institute of Aeronautics and Astronautics, New York, 1977.
3. Gerard K. O'Neill, *The High Frontier; Human Colonies in Space*, William Morrow and Company, Inc., New York, 1977; also published in paperback by Bantam Books, Inc., New York, 1977.
4. Richard R. Vondrak, "Environmental Impact of Space Manufacturing," *1977 Princeton Conference on Space Manufacturing/Space Colonies*, AIAA, New York, 1977.
5. Gerard K. O'Neill, "The Low (Profile) Road to Space Manufacturing," *Astronautics and Aeronautics*, March, 1978.
6. *Space-Based Manufacturing from Non-Terrestrial Materials*, Volume 57, Progress in Aeronautics and Astronautics, AIAA, New York, 1977.
7. The 1977 Ames Summer Study on Space Settlements, NASA Special Publication, in press.

Lobbying about space

This is a detailed access and how-to booklet designed for people who want to lobby for increased U.S. space activity. No doubt it is equally useful to anyone who wants to lobby against such activity.

—SB

The 1978 Space Lobbyist's Handbook
63 pp.
$4.20 postpaid

from:
Space Initiative
Box 353
Santa Clara, CA 95050

Craft

Mon Tricot

I have found these three Mon Tricot books indispensable. The **Dictionary of Stitches and Patterns** *has over 2000 stitches and patterns for both knitting and crochet. International knitting and crochet terms are given in French, English, German, Spanish, Italian, Danish and Dutch. Basic stitch instructions are reviewed, and needle sizes are compared. The two volumes of* **Knit and Crochet** *tell how to make every shape neck, sleeve, collar, corner, dart, pleat, and on and on one could ever need. Tips are given to help increase speed, uniformity, technique. All three books have very clear illustrations and directions. Mon Tricot also publishes a monthly knitter's magazine. Each month features a different type of garment: coats, sweaters, men's, baby's, Aran patterns, etc. The patterns are usually more exciting and colorful than the ones generally available in the U.S.*

—Evelyn Eldridge

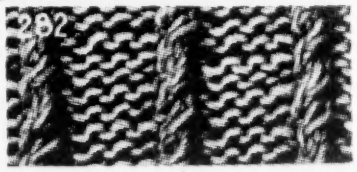
Knit & Crochet, Vol. I & Vol. II
Mon Tricot Editors
1976; 130 pp.
$1.98 each

Knitting Dictionary
(Stitches & Patterns, Third Edition)
Mon Tricot Editors
1975; 210 pp.
$2.50 postpaid

from:
Crown Publishers
One Park Ave.
New York, NY 10016
or Whole Earth

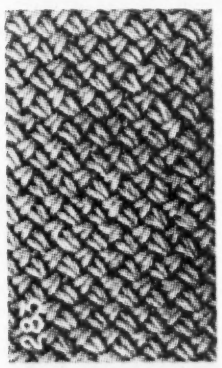
Mon Tricot
$15.00 /year (monthly)

from:
Mon Tricot
Subscription Dept.
Box 2026
Hillside, NJ 07205



embossed cord stitch

Multiple of 6 + 4.
Row 1: P 4, * k 2, p 4 *.
Row 2: * K 4, cross 2 (thus p 2nd st then k 1st st) *, k 4.



woven basket stitch

Multiple of 2.
Row 1: * Pass right-hand needle behind first st k second st, k first st in usual way.
Row 2: P 1, * p the second st, p first st *, p 1.

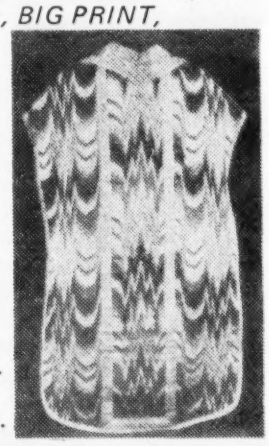
Fiberarts

Fiberarts *is a bold new bi-monthly magazine about the people (mostly women) who are turning weaving and fiber sculpture (back) into a very fine art. In their large format they look at various creative personalities, mediums, techniques and purposes. Coverage of international shows and projects is included, as well as information on cooperatives, copyrighting, and marketing. There is a good deal of advertising which, in this case, serves as an inoffensive resource guide. Plus — photos of wonderful creations, a home-style yet professional approach, BIG PRINT, and originality.*

—Rosanne Kramer

Fiberarts
$9.00 /year U.S.
$11.00 /year Canada & Foreign

from:
Fiberarts
3717 4th N.W.
Albuquerque, NM 87107



Historical vestment. Chasuble. Italy, 18th Century, silk embroidery on linen.

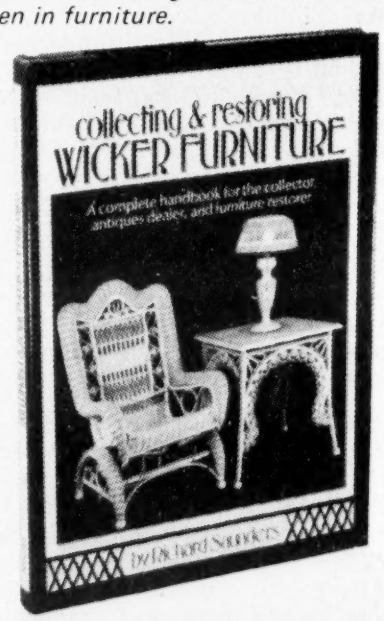
Collecting and Restoring Wicker Furniture

With a renewed interest in craftsmanship and handmade things, has come a renewed interest in wicker furniture. Its lightness and natural squeaky character has an undeniable charm, especially in modern sterile architecture. This book is both a gallery of traditional 19th century designs, and a fine manual of how to repair any restorable items you might find in Aunt Minnie's attic. I hope this book and the wicker revival are successful; fine wickerwork is just beautiful, while at the same time allowing some of the most gross design excess ever seen in furniture.

—J. Baldwin

Collecting and Restoring Wicker Furniture
Richard Saunders
1976; 118 pp.
$6.95 postpaid

from:
Crown Publishers
One Park Ave.
New York, NY 10016
or Whole Earth



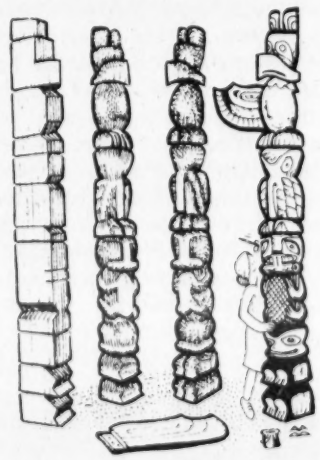
How to Carve Totem Poles

I can report from experience that there are few things more satisfying than carving a totem pole. Don't knock it until you've tried it. The author has been carving for 20 years. He's good at it, and his book is good too. I might also add that totem carving is a great family enterprise; your pole can accommodate everyone's personal ideas and yet be one thing. Think of how our cities would look if the power companies let us decorate their poles. The book is one of those rare labors of love.

—J. Baldwin
[Suggested by Meryl & Mike Domina]

How to Carve Totem Poles
Paul N. Luvera, Sr.
1977; 160 pp.
$9.45 postpaid, IF you mention CQ, otherwise it's $12.45

from:
Paul N. Luvera, Sr.
2102 9th St.
Anacortes, WA 98221



The Fine Art of Cabinetmaking

Dear CoEvolution:

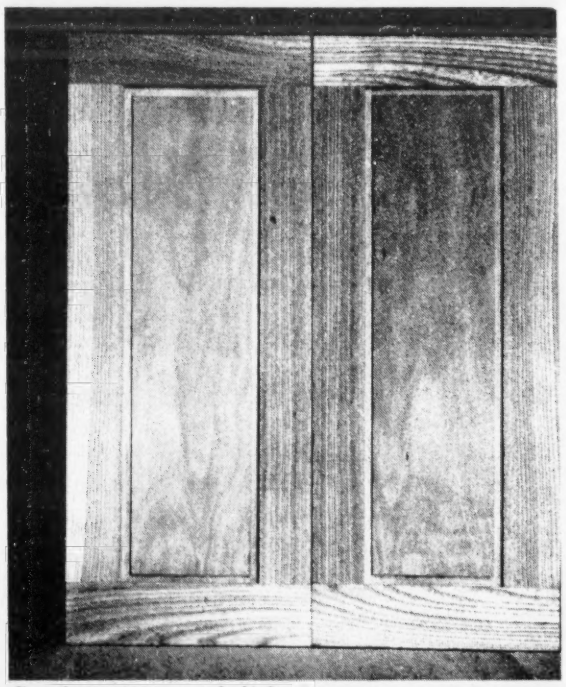
Thank you for listing A Cabinetmaker's Notebook *in the Spring '78 CQ. You might be interested to know that Krenov has a new book out —* The Fine Art of Cabinetmaking. *The recent book is much more of a "how-to" book, covering subjects like chain-saw lumbering, air drying of wood, selecting grain patterns as design elements, the construction of wooden planes, and even how Krenov makes his beautiful coopered doors. He uses the full array of power tools during the preliminary steps and relies on his hand tools to produce the final surface.*

—Thomas Rein

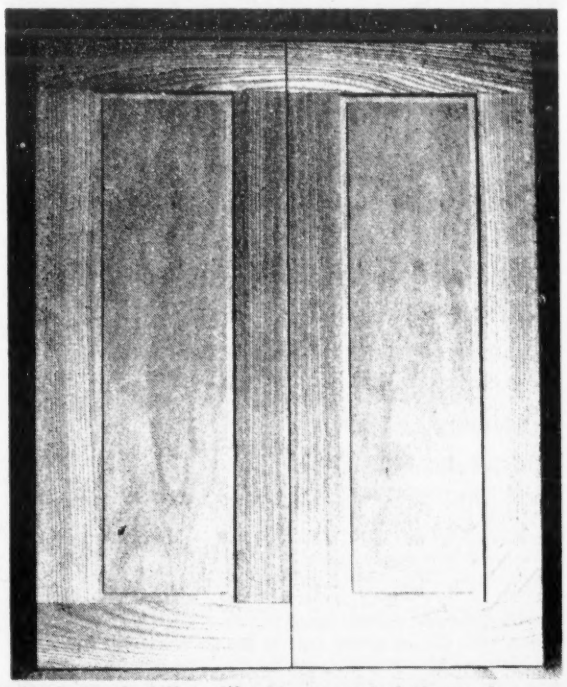
[Suggested by Fred Coates]

The Fine Art of Cabinetmaking
James Krenov
1977; 192 pp.
$14.95 postpaid

from:
Van Nostrand Reinhold Co.
Order Dept.
7625 Empire Dr.
Florence, KY 41042
or Whole Earth



Carelessness — and disharmony.



An intended "oval" effect carried through.

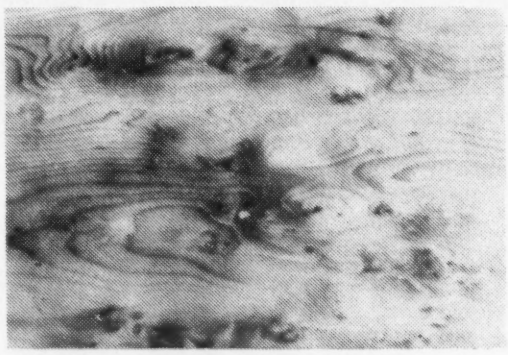
Fine Hardwoods Selectorama

The title sounds corny as hell, but the book packs a whale of information. The book has a three-page graph illustrating the "comparative physical properties of some popular species." The graph deals mainly with domestics (alder, hackberry, osage orange, willow, etc.) and includes some exotics. Specific gravity, lbs./ft.^{3}, strength, stiffness, hardness, shock resisting ability, bending strength, and shrinkage from green to dry states are the categories covered. The book then lists nearly every wood of any commercial importance (domestic and foreign) conveying unusual characteristics, availability, relative cost, source, and Latin names (interesting to see who's in the same family). The soft cover book has 58 pages and 189 photographs.

—Thomas Rein

Fine Hardwoods Selectorama
(A Guide to the Selection and Use of the World's Most Popular Species)
1978; 57 pp.
$4.00 postpaid

from:
Fine Hardwoods/
American Walnut Assoc.
666 North Lake Shore Dr.
Suite 1730
Chicago, IL 60611



Yew, English *(Taxus baccata)* European, Caucasian **Source:** England. **Color:** White to pale lemon to pale pink, sometimes orange to reddish-brown to rose red. **Pattern:** Smooth, lustrous grain frequently made distinctive and attractive with tiny black burls or pips, straight grained to wavy. **Characteristics:** Fine textured, strong, elastic. **Availability:** Limited. **Price Range:** Valuable.

Carbide Cutting Tool Catalog

As many of you get into heavy-duty woodworking, you'll find that your time and/or money is spent sharpening things you cut with. Carbide tipped tools last a lot longer and more than make up for their higher first cost. The problem is where to get them. Here's where. More modest needs can be accommodated at Sears. This outfit is for the pros.

—J. Baldwin

Carbide Cutting Tools
Catalog
Free

from:
North American Products Corp.
2625 Cumberland Parkway N.W.
Atlanta, GA 30339

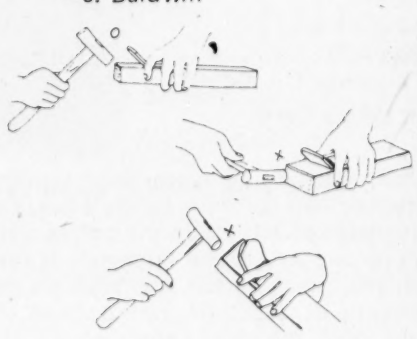
The Care and Use of Japanese Woodworking Tools

Those beautiful, light Japanese woodworking tools are fully explained and illustrated in this modest manual. Both the drawings and text are in the same quiet spirit of competence appropriate to the tools. (I almost said instruments.) Yum.

—J. Baldwin

The Care and Use of Japanese Woodworking Tools
Kip Mesirow and Ron Herman
1975; 95 pp.
$7.50 postpaid

from:
Woodcraft Supply Corp.
313 Montvale Ave.
Woburn, MA 01801



Shown here is the most natural way of holding kanna and a mallet (in front of chest). In grasping kanna hold blade with thumb and index finger, while the other fingers hold the body. Strike the body with the mallet parallel with blade until blade loosens, also listen to the sound change when the blade becomes loose.

The Vegetarian Epicure, Book Two

Book One of **The Vegetarian Epicure** *has been our household's favorite, most-used cookbook since it was reviewed in the EPILOG (p. 591). We have battered four copies. Now Book Two is out; Anna Thomas has done it again, and every bite as good as the first. The format and style are the same, with some delicious additions — sections on Italian, Spanish, Mexican and Indian dishes; more and yummier desserts; a new section for preserves and relishes, and on and on. Cooking with her recipes is a no-miss adventure; the food is always deliciously exciting.*

—Evelyn Eldridge

The Vegetarian Epicure, Book Two
Anna Thomas
1978; 401 pp.
$6.95 postpaid

from:
Alfred A. Knopf, Inc.
450 Hahn Rd.
Westminster, MD 21157
or Whole Earth

cheese and chutney omelet

¼ lb. fresh white farmer cheese
4 Tbs. preserved chutney
4 to 5 eggs
salt to taste
fresh-ground black pepper to taste
butter

Crumble the cheese coarsely. Spoon out the chutney (you can use a little more or less, depending on how spicy it is), and if it has particularly large pieces of fruit in it, cut them into smaller bits.

Make a plain omelet according to the directions on page 124. When the eggs are nearly set, but still moist on top, sprinkle the crumbled cheese over one side of the omelet, and spoon the chutney on top of the cheese.

Fold the other side of the omelet over the filling and leave it in the pan over low heat for another minute as the cheese and chutney warm up.

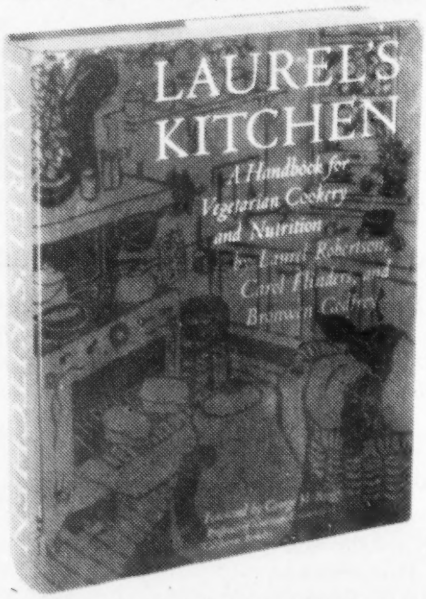
Serve immediately on warmed plates.

This omelet serves 2—or you could make 2 individual-sized omelets with the same ingredients.

Laurel's Kitchen

There are lots of vegetarian cookbooks around. The big difference here, the one which makes this book superior, is that **Laurel's Kitchen** *has a giant 180-page section on nutrition. There are complete descriptions of the different food components, analyses of foods, calorie-computation tables, and a good bibliography. You can cook a recipe from the front of the book, then refer to the back to see how much of which minerals, carbohydrates, etc., you gave your family that day. Tasty recipes, too. Tom Ferguson, our medical editor, gives it an A+.*

—Evelyn Eldridge



Laurel's Kitchen
(A Handbook for Vegetarian Cookery and Nutrition)
Laurel Robertson, Carol Flinders, and Bronwen Godfrey
1976; 508 pp.
$16.30 postpaid
from
Nilgiri Press
Box 477
Petaluma, CA 94952
or Whole Earth

Don't let the time factor keep you from fixing hot whole-grain cereals for your family's breakfast. Many of us are in the habit of setting up the coffee pot as soon as we can grope our way to the kitchen — it takes no more effort to get the cereal started, and within a half hour (while you're dressing or meditating) it's cooked. Measure out the water and cereal the night before, so it's all ready to go. Even faster is the thermos method: Put 3/4 cup or so of cereal into a preheated pint-sized thermos, fill it up with boiling water, cap it, and let it stand overnight. By breakfast time, the cereal is cooked and piping hot. If it's thick, thin it to taste with more hot water.

Multi Purpose Food

MPF is produced under license from the Meals for Millions Foundation only by that big food wonder — General Mills. Needless to say, MPF isn't promoted with the same exuberance as Wheaties.

I've done some investigating and here's what I've found. MPF is more than 50% protein — all of vegetable origin, specifically from toasted soy granules which have been processed to remove flavor components and inactive enzymes and enzyme inhibitors naturally present in raw soybeans.

Each ounce (approximately $.08) contains 14 grams of good quality protein (and 9 oz. of carbohydrates) equal to 2 ounces of fish or cheese, 2 eggs or 1-1/2 cups milk. In addition 12 important vitamins and minerals are included. MPF contains no fat and is easily stored over five years in cans. It is precooked and ready to eat and can be easily added to many foods but can be eaten alone as a subsistance diet.

Using the data in Philip Chen's book **Soybeans for Health and Longer Life** *(Keats Publishing, Inc., 1973) two ounces of MPF ($.16) "provides one-third of the minimum daily requirements of protein, calcium, iron, phosphorus, iodine, vitamin A, B1, riboflavin (B2), niacinamide and vitamin D." Forty-eight cents a day at current (and significantly higher) General Mills prices — not bad.*

—Malcolm Ponder

MPF is available from General Mills, Inc., 400 Plymouth Bldg., Dept. 175, Minneapolis, Minnesota 55440 at the following cost (effective 3/15/77).

Product	Pounds/Can	Price/Can	Price/Case
MPF Coarse Granular (Cornmeal-type particle size)	4-1/2	$4.75	$27.50

In addition shipping charges amount to $1.75 per can, $5.00 per case (1 - 5 cases) or $4.00 per case for each additional case.

If you could get your school district to add MPF as a supplement to their hot lunch program you'd be giving the children a great boost.

Fern River Herbal Products

"Organic," "natural" products have been expropriated by the big-time, cash-is-king boys. What was once a genuine effort to give humans healthy, carefully made products of plants has been turned into multi-million dollar schlock. Take Clairol's Herbal Essence Shampoo. The label reads:

> *Sodium laureth sulfate, Lauramide DEA, Glycerine, Laureth-23, Imidazolidinyl urea, Quaternium-6, Hydrolyzed animal protein, Disodium EDTA, Methylparaben, FDC Blue No. 1, FDC Yellow No. 5, DC Red No. 33.*

The ad says, "Like the first day of spring in a Garden of Earthy Delights." Well, yuk!

The answer to all this is a small group of women who handmake their products direct from the oils, roots and leaves of plants. For instance, the Fern River Body Powder label reads: Arrowroot, Chickweed, Comfrey, Goldenseal, Myrrh and Lavender. Their Skin Lotion label with almond, avocado, sesame and apricot oils sounds as good to eat as use. It is a pleasure to push products that are respectful of plants and honest in intentions.

—Peter Warshall
[Part of Peter's pleasure is living with one of the manufacturers. —SB]

Product List:
Body Powder
Skin Lotion
Herbal Liniment
Massage Oil
Herbal Chew
Healing Salve

Wholesale only. Free brochure from:
Fern River
P.O. Box 613
Bolinas, CA 94924

The Last Cowboy

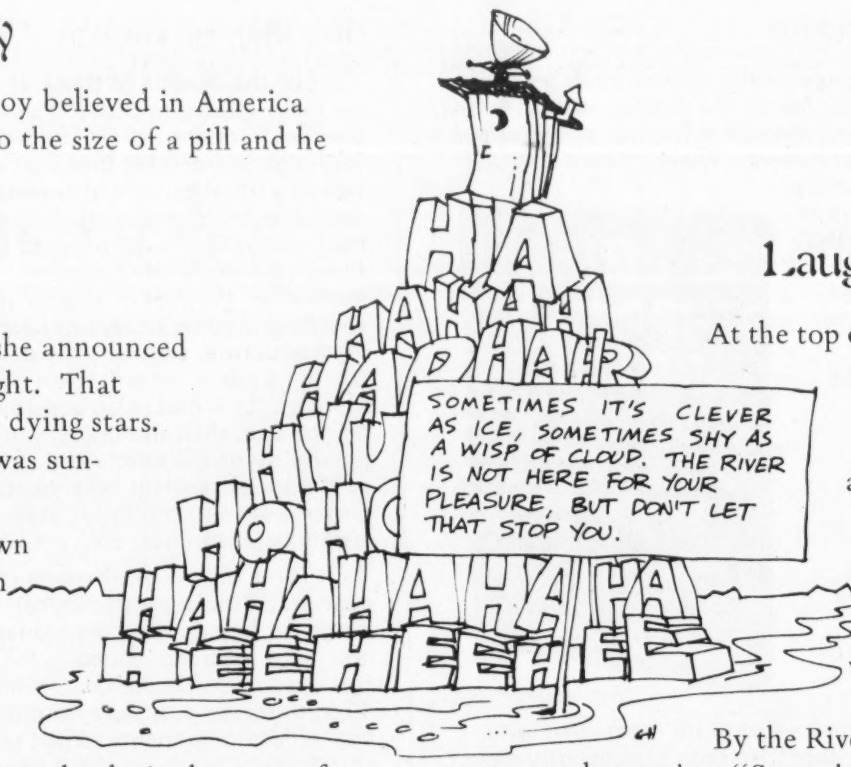
The last psychedelic cowboy believed in America until the frontier shrank to the size of a pill and he was forced to swallow it.

The Honeymoon

I. On their honeymoon, she announced her intention to live on light. That night, his teeth ached like dying stars. When he woke up, there was sunlight on his pillow.

II. He wanted to tear down her cities, plant gardens in the rubble. Giant vegetables would grow there. They could make salads, talk about it.

III. Captured by his beauty, she devised means of escape: lowering herself by the bedsheet, she dropped from his pale eyes into his lap. He felt nothing.



Laughter Mountain

At the top of Laughter Mountain
we'll build our home.
Inside, we'll put
a mirror, so curved
around itself that
light, once it enters,
cannot escape
and thus,
captive to reflection,
will reward us always
with its example.
By the River With No Name, we'll erect a marker saying, "Sometimes it's clever as ice, sometimes shy as a wisp of cloud. The river is not here for your pleasure, but don't let that stop you."

SIX STORIES

BY SY SAFRANSKY

Insured

The life insurance salesman will be here soon. He will put it to him bluntly: he has responsibilities. In the salesman's case, there are photographs of the funeral. He is a handsome corpse. He feels flattered. There is a picture of his wife and daughter, dining in an expensive restaurant. They are dressed in mourning, but they look satisfied when the waiter arrives with the check. The waiter is affectionate. He pats the daughter's head, slips his hand under the wife's skirt. She squirms. The waiter draws out a golden hatchet. There is a close-up on the hatchet. His name is engraved on the handle. The spelling is wrong. "NO SALE," he bellows, hurling the photograph at the salesman's head. It flutters to the floor like a lady's handkerchief, damp with tears.

Sy Safransky lives in Chapel Hill, North Carolina where he edits and publishes **The Sun, A Magazine of Ideas.** *He started it with $50 four years ago and sold the first few issues on the street.* **The Sun** *looks good and says good things in a variety of ways: articles on childbirth at home, black holes, Ram Dass, world hunger, as well as poems, photographs and the stories we've reprinted here. Safransky is interested in receiving submissions that "make sense and enrich the space we share." $4.50 for half a year from The Sun, 412 W. Rosemary St., Chapel Hill, NC 27514.*

—Anne Herbert

The Interpretation of Dreams

He saw her crouching between pleasure, and pain. Should he laugh, or cry? The light in her eyes was unequivocal as the noonday sun. He imagined walking an imaginary straight line towards her. Perhaps her heart would open, like the twin halves of a peach.

When he woke up, she lay cleanly separated beside him. If he could love both of her equally, he knew, he would understand the dream.

Coffee

Over his first cup he decided to be free.

Over his second cup he forgave his executioner.

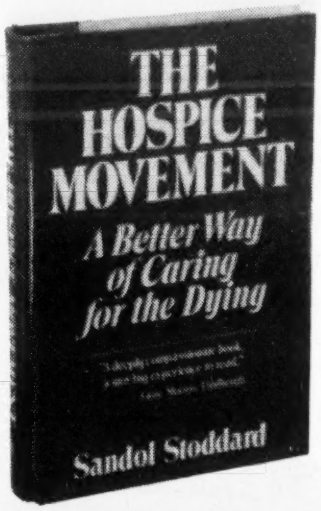
Over his third cup he brushed the counter with his wings.

Over his fourth cup he recalled the smell of the cross.

Over his fifth cup he discovered the lost continent. The language came back to him, all at once, a fever of words bursting within him, his mouth on fire, every secret given voice, even the reason for being there, and the next cup, and the next. ■

The Hospice Movement

Good, now we have a first general-audience book on caring for the terminally ill. It builds on the experiences of British and American hospices and shows the way for this invaluable service to be available everywhere. There's a nice detailed appendix of appropriate drugs for the special discomforts of the dying, notably pain. With that in hand, dying can be something besides release from torture. —SB



The Hospice Movement
(A Better Way of Caring for the Dying)
Sandol Stoddard
1977; 266 pp.
$8.95 postpaid
from:
Stein & Day, Inc.
Scarborough House
Briarcliff Manor, NY 10510
or Whole Earth

General Grant was madly in love with his cross-eyed wife, and I always liked him for that. He didn't necessarily disbelieve in angels, he just didn't want anyone standing around his deathbed being smarmy about them. He was busy dying his own death, and didn't take kindly to being interrupted. To live fully, as warriors know, is to embrace life in all its transformations; and here, of course, is the hospice idea again. In its power to incorporate all forms of human life — young, old, healthy, sick, witty and dull, feeble and vigorous — into one working organism in which each part is useful and nourishing to the other, the fully-realized hospice community such as St. Christopher's is a paradigm of what a more highly conscious human life might be, and of what society might therefore become. . . . "The communication of the dead," said T.S. Eliot, "is tongued with fire beyond the language of the living."

Job-sharing, though good, is made difficult

. . . For the benefit of those of that do not need to be sold on the proposition that job sharing is good, it might have been well for the article (Spring, 1978 CQ) to address the well-nigh insuperable practical problems. Some years ago I was in a situation in which several of us thought it would be desirable to share our jobs. In negotiations with the company about it, it was found to be totally unacceptable to those who make the decisions. The reasons were mainly economic: the cost of supporting an employee, the paper-shuffling matters of record-keeping, etc., demanded by our legal structure, were not divided by the number of employees sharing a job — indeed, these costs were multiplied by this number. One must also consider that if the job is a high-paying one, then the division of the job will prevent the possibility of the employee's social security being paid off, so the social security costs would also have been higher. Other costs also multiply: state requirements dictating paid vacations, insurance, etc., are likewise indivisible.

As it turns out, then, in many industrial situations the real costs of a "multiple employee" filling a given slot far outweigh in the minds of the managers the hypothetical and abstract benefits outlined in the article. Those of us who feel that we can accomplish what we want with a less than 40 hour week must have hard dollars-and-cents arguments and/or legal arguments to put this program over in most situations. Clearly, in the Armand Hammer instance, there would have been no legal way in which management could have been convinced to allow it. The rate of production of an assembly line is a function of how fast the machinery supplies the parts, and a single employee would not be any more productive than the multiple employee in this case. Not everyone is temperamentally suited to an extra-legal way of life. It would be of benefit if someone would address this very real problem.

Rev. E. John DeHaven
First Eclectic Church
Wayzata, Minnesota

Resources for the disabled

Nobody is sure how many disabled people there are in the U.S., but the most conservative estimates say that our population is about equal to the black population (20 million). As advances in medicine prolong our lives and increase our numbers, we think it's time to become something more than "Acorn people." In the struggle for alternatives, each of us must find his own way, but with recognition that "Total self reliance" is not for us. We depend for our very existence on the support of our communities, and it is crucial that we know what is available to us.

Here is a list of resources and information-providers which I've found useful:

On Law:

The federal government is presently implementing a number of laws which include crucial civil rights provisions for America's most neglected minority, but we can't expect to benefit from these laws unless we know about them and are prepared to agitate for ourselves.

The National Center for Law and the Handicapped (1235 N. Eddy Street, South Bend, IN 46617), in addition to advocating for the disabled in the courts, provides information on rights and on organizations throughout the country. Its (free) law journal, **Amicus**, is all that you need to be an expert.

The Senior Adults Legal Assistance Project of Palo Alto, CA, provides legal information in a breezier style through its free newsletter, **Alphe.**

At $5.00/year, membership in the American Coalition of Citizens with Disabilities is a bargain. As well as the satisfaction of supporting political action, you get two publications and lots of information on how to put together a demonstration, etc. Their address is: ACCD, Rm. 817, 1346 Connecticut Avenue, N.W., Washington, D.C. 20036.

On Travel:

The Travel Information Center, a service of Moss Rehabilitation Hospital (12th Street and Tabor Road, Philadelphia, PA), provides specialized information for the disabled traveler. They can tell you how to find a wheelchair-accessible hotel room in Paris, what to do if your braces break in a strange city at 2:00 a.m., and which of our national parks have facilities for the disabled. They supply not only lists of official guide books, but also information from other disabled travelers who have used the service. Just tell them about your disability and what you want to do and they will advise you on the pitfalls without telling you to stay home.

On Reading:

The Library of Congress Talking books program is now available to the visually-impaired and to people who have trouble with conventional books because of limited use of hands (including many people with muscle diseases, cerebral palsy, or paralysis). They provide a pretty good selection of books and periodicals on tape or disc, free mailing, and loan of playing equipment which can be operated with very little finger strength. Contact your state library. You can probably get a toll-free number through your local library or your Commission for the Blind.

On Resources:

The newly-established Clearinghouse on the Handicapped (Office on Handicapped Individuals, 338D Humphrey Bldg., 200 Independence Ave., S.W., Washington, D.C. 20201) is a central source of information on government programs and publications.

Harriet M. Johnson
Charleston, South Carolina

For Tupelo

by Kathy Craft

Peter Karassik

My cat is a south sea island,
reefed in coral,
glistening in the sun,
sleeping to the time of palm trees swaying,
my cat with his loins of white-hot sand,
with his eyes two moons rising on the ocean,
his eyes the phosphorous beneath the waves.

My cat is a jeweler's dream,
at Tiffany's they turn a jealous green
when they see the golden bracelets
that circle his arms,
his half amber, half emerald eyes,
the wedding bands that march
to the tip of his tail.

My cat is a pirate with a single pierced ear,
with ivory knives sheathed in his smile,
with a buried treasure in his chest,
my cat calling the wind
when he sharpens his claws at the top
of the mast,
my cat walking in his tightrope dance
down the plank.

My cat is the envy of the couturiers,
in his grace
and his cape imported from the eclipsed
side of the sun,
my cat in his silk saffron sarong,
my cat in his velvet gloves.

My cat is a biorhythmic clock,
his heart ticking at the speed of light,
my cat is a gold cased pocket watch,
my cat winding his tail at night
in a coilspring around his toes,
a coilspring around his nose,
my cat a sundial:
the hour in the size
of his radiant, radium, wax and wane eyes.

My cat is an ecology cat,
heated with solar energy,
recycling his life nine times.

My cat is of the east,
he speaks Chinese
and plays ping pong,
my Mandarin cat with his acupuncture claws,
with his mantra murmurred in his purr,
my cat in his yoga,
my cat in his noh play,
celebrating a tea ceremony,
steeping in the sun,
my cat raking his rock garden.

My cat is psychic,
he sees in the dark,
sensing storms and friends,
he inherited the secret of the pyramids,
my cat is a medium,
a PK artist
levitating my spirits,
a spiritual healer
laying his hands on my chest,
my breast, my heart, my marrow,
with palm and sole,
my cat a faith healer,
my cat healing my faith. ■

The Sacred

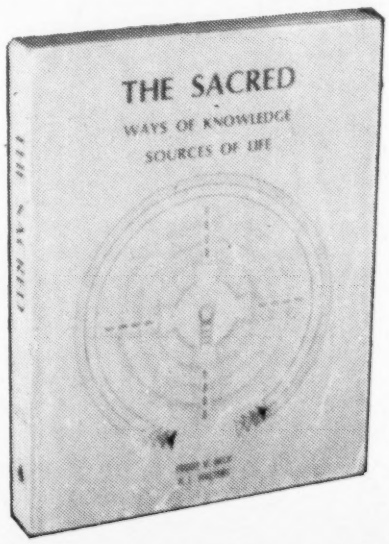
I love this book. I read it like Jews and Christians read the Bible or Asian peoples read Lao Tzu or Confucious or Buddhists their sutras. Life may be complex, but the religious principles of traditional native peoples are simple, straightforward and clear. **The Sacred** *quietly, carefully and somewhat bookishly lays out the morality of humans before the whiteman, as well as the growing bridge between modern Euro-American society and the strength, beauty and vitality of the American Indian People.*

Put this book with Carl Sauer's **Man In Nature: America Before the Days of the White Man.** *I cannot think of two more needed books to be read throughout America's educational system. Herein lies the roots of perhaps this continent's twenty-first century religious synthesis.*

—Peter Warshall

Note: This book was prepared for use by young Native Americans and largely put together by Native Americans. It's not academic or nostalgic. It's a spiritual field guide for North America. *—SB*

The Sacred
(Ways of Knowledge Sources of Life)
Peggy Beck and A.L. Walters
1977; 369 pp.
$8.00 postpaid
from:
Navajo Community College Press
Curriculum Development Center
Navajo Community College
Tsaile RPO.
Navajo Nation
Arizona 86556



Another concept that North American sacred traditions have in common is that *all things in the universe are dependent on one another*. Everything, though having its own individuality and special place, is dependent on and shares in the growth and work of everything else. This means, for example, that if you take the life of an animal you have to let that animal know why you are doing so and that you are taking full responsibility for your act. Why? For one reason; because it is a way of showing that you understand the balances that exist in all natural systems, or *ecology*. For another reason (perhaps harder to see) because human beings and animals have a relationship to one another. Animals, for instance, know when they are in the presence of human beings, and they learn to avoid places where one of their own members has been killed. The elders and the oral histories tell us that long ago we once could speak the language of animals and that our survival depended on maintaining the relationships between animals, plants, rivers feeding grounds, etc. Keeping this in mind, then, the concept of dependency and respect is not difficult to understand.

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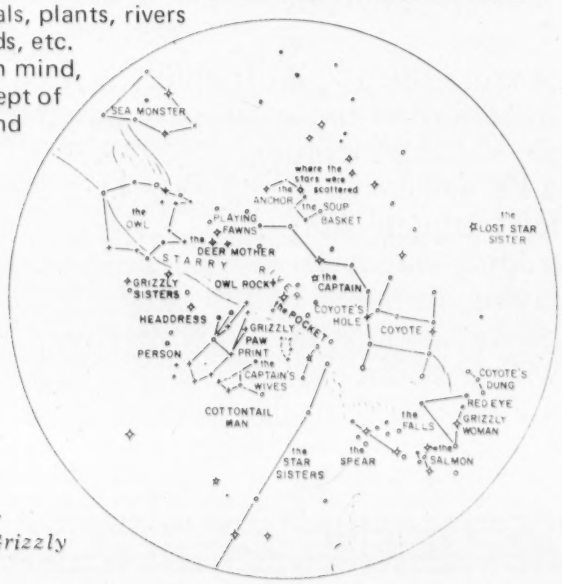


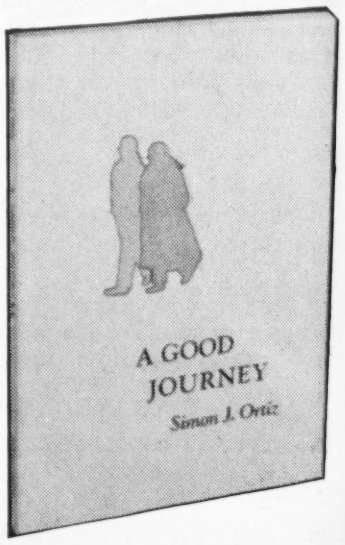
Star Chart for the story of Grizzly and the Deer.

A Good Journey

Simon Ortiz is 36, poet, writer, storyteller from Acoma Pueblo. **Going for the Rain** *(CQ, Summer 1977, p. 134) and now* **A Good Journey** *reveal Simon Ortiz as a careful, beautifully spoken, carrier of the traditions of Native American peoples and a precise, elegant craftsman of modern American (re: English) poesy.*

—Peter Warshall

A Good Journey
Simon Ortiz
1977; 165 pp.
$6.95 postpaid
from:
Turtle Island Press
Netzahaulocoyotl Historical Society
2845 Buena Vista Way
Berkeley, CA 94708



How Much Coyote Remembered

O, not too much.
And a whole lot.

Enough.

•

Why do you write? Who do you write for?

Because Indians always tell a story. The only way to continue is to tell a story and that's what Coyote says. The only way to continue is to tell a story and there is no other way. Your children will not survive unless you tell something about them — how they were born, how they came to this certain place, how they continued.

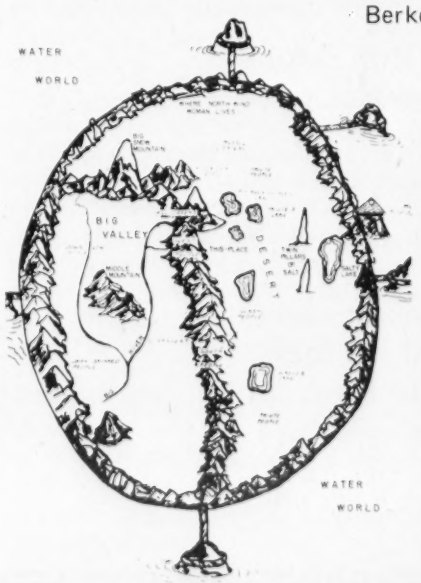
The Destruction of the People
Sun, Moon and Stars

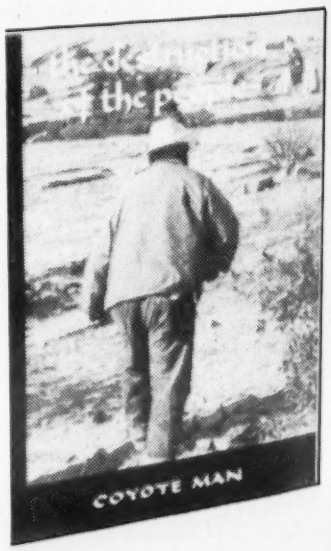
In the delightful tradition of Jaime di Angulo. These two books record the history and stories of north California tribes. There are now less than 30 men and women remaining who know the fragments of their now destroyed culture. Like Jaime di Angulo these books are model anthropology — recorded in the best humor and insight of the oral tradition.

—Peter Warshall

The Destruction of the People
1973; 117 pp.
Coyote Man

Sun, Moon and Stars
1973; 100 pp.
Coyote Man
$3.95 each
from:
Brother William Press
P.O. Box 5032
Berkeley, CA 94705





Of Cabbages and Kings: Tales from Zinacantan
Of Wonders Wild and New: Dreams from Zinacantan

When John Wesley Powell started the Bureau of Indian Ethnography (1870s), he sent various collectors and anthropologists into the field to retrieve artifacts and descriptions of cultures he had grown to respect and to cherish. As usual, some of the collectors were bastards and boors. But, others like Frank Cushing with the Zuni were linguistic geniuses with an almost innate sympathy for Native American traditions and life.

Now, in the late twentieth century, Bob Laughlin is Frank Cushing's heir. I have never met an anthropologist with such a fine, quick humor and precise sense of the difficulties of translation. The people he has lived among are the Zinacantecans — a branch of the Mayan speakers. His compassion and gentleness suffuse his relentless scholarship. Especially in these days when many American poets parade as campy Indians writing schmaltzy ego-ridden shamanism, these texts just glisten like jewels of the first water.

—Peter Warshall

Of Cabbages and Kings
(Tales from Zinacantan)
047-000-00346-6
Robert M. Laughlin
1977; 427 pp.
$8.00 postpaid

Of Wonders Wild & New
(Dreams from Zinacantan)
Robert M. Laughlin
1976
$3.30 postpaid

both from:
Supt. of Documents
Public Document Dept.
U.S. GPO
Washington, D.C. 20402

Xun Vaskis, 1971

If he is not immortal, he is well advanced in that direction. At last report Xun Vaskis claimed to be one hundred and twenty years old, but, when the ashes fell from the sky in 1902, he was still a young boy. Whatever his age, there is no man today in Zinacantan who would not bow to him. In 1934 he passed through the fourth and highest rank of the religious hierarchy, having attained the most coveted post at each level. Probably no other Zinacantec has lived so long as to see his own son too become an elder and even one of the six holy elders to whom alone is entrusted the duty of fastening Christ's body to the cross on Good Friday. . . .

Xun's accounts are sprinkled throughout with both obscenities and ritual words and phrases; the former a sign of his self-assured status in the community, the latter a sign of his pride as a shaman, and an avowal of his intimacy with the gods. Quite deliberately he neglected to add the particle *la* which indicates that the story was only hearsay, for he wants you to know that he was there at the time of creation.

•

There is a Fallen Flesh, a devil, as we say, indeed! He was a person in fact, but he would hang himself up on the cross.

He would hang himself up on the cross. His flesh would come down there. That skeleton of his would take a trip, as we say. His skeleton would take a trip. His flesh would be left behind there in a heap by the cross.

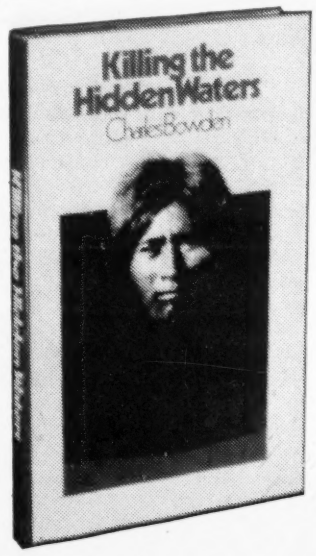
When he came back again . . . "Go down, meat! Go down, meat!" he said when he let his flesh down.

Then when he came back, his flesh climbed up again.

Killing the Hidden Waters

The native Americans of the Southwest lived a life based on desert storms and underground water. As wells and pumps gave year-round access to what had been seasonal water supplies, the lives of these peoples altered drastically. Now, there is heavy competition for the underground water between Euro-Americans as well as native peoples. Water is being consumed faster than the chambers of Earth can be replenished. This is the story, succinctly told. A must for any inhabitant of the Sonoran Biogeographical Province. Good groundwater reading for all.

—Peter Warshall
[Suggested by Will Hearst]



Killing the Hidden Waters
Charles Bowden
1977; 169 pp.
$9.95 postpaid

from:
University of Texas Press
P.O. Box 7819
U.T. Station
Austin, TX 78712

The woman remembers. She is fifty something, Papago. Her life has been spent in a village beneath Baboquivari Peak surrounded by kinsmen, desert, mud walls, personal things.
Yes, she says, many used to farm, now not many. Her husband is one of the few tribesmen who has clung to the ancient O-otam way of wresting a crop from the Sonoran desert. This way is called akchin: arroyo mouth. It is very simple. In summer, due to tilt of earth and global swirl of air, the rains come to the Baboquivari Valley. Day after day the puff of cloud builds over land electric with the dry. Suddenly, release comes from the bondage of sunny skies: rain. The moisture strikes the land with violence and roars off the rock slopes of the mountains, savaging a route down the arroyos to the valley floor. Here, speed is lost, slope gives way to flat of floodplain and the waters move as a sheet over the porous dirt, sinking in, making life possible. That is when the man plants.

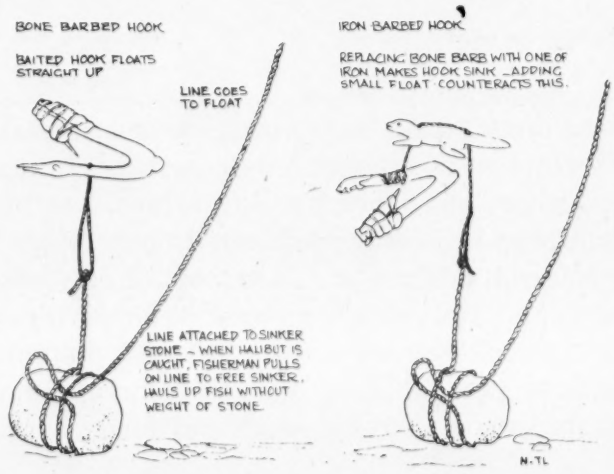
Indian Fishing

A coffee-table beauty. Hooks, harpoons, household items for cleaning and cooking, stories and amulets, trapping techniques and smoking technology. Photos, text, and how-to-do-it drawings that will constantly renew one's faith in human labors of love. The love, in this case, being halibut, salmon, eulachon, dogfish, flounder, herring and sturgeon.

—Peter Warshall

Indian Fishing
(Early Methods on the Northwest Coast)
Hilary Stewart
1977; 181 pp.
$17.95 postpaid

from:
University of Washington Press
Seattle, WA 98105
or Whole Earth



Warrington Hudlin is from East Saint Louis originally, studied film at Yale, and now lives in Harlem. **Street Corner Stories** *is his second film. Its premise is deceptively simple: documenting the early morning scene at a little coffee-shop on Dixwell Avenue, main street of one of New Haven's black neighborhoods (and just about ten blocks from my house). What makes it so successful is Hudlin's superb editing and camerawork, his rapport with his subjects, and his subjects' profound candor.*

But what's sadly missing from this layout is the movement, the body language. Hardly any shot is static. And only a fraction of what is "said" is said in words. The film is organized around the complex dance of fraternity, the constant exchange of male/male signals. These stories are just a few solos and duets in a much larger and more subtle group ritual.

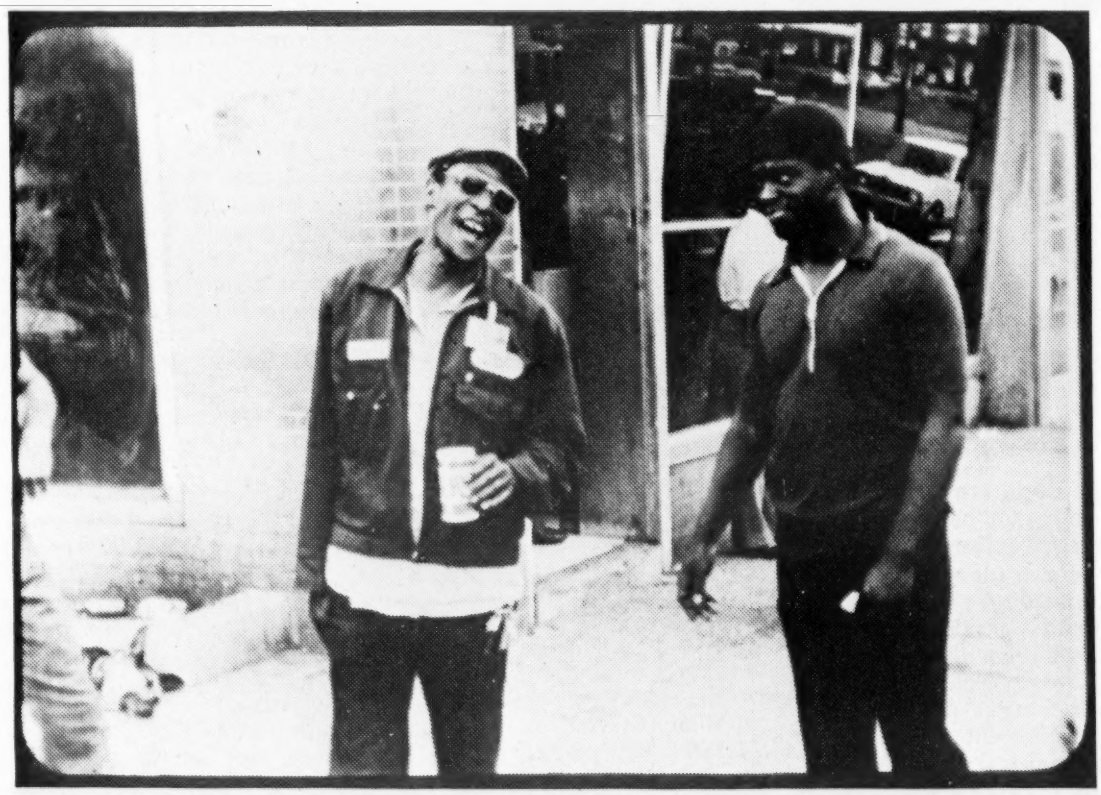
Street Corner Stories *was most recently shown at FILMEX (the Los Angeles International Film Exposition); before that at the Center for Visual Anthropology in New York; before that at the Museum of Modern Art; and before that, for one night, at a rented theater in New Haven. It's ironic that a film of this quality, rooted in one ghetto, should be confined to another (highbrow) ghetto by the constraints of commerical film distribution. It is, however, being distributed independently: write to Briar Patch, Inc., P.O. Box 315, Franklin Lakes, New Jersey 07417, for rental information.*

—Robert Horvitz

Street Corner Stories

Excerpts from a Film

BY WARRINGTON HUDLIN



"Gimme about $500, Bobby. I'll pay you back the first chance I get."

"I just told you that my car ain't even breathing and that's the best friend I got . . . You know that every dollar I got to contribute, I have to contribute to that mothafuckin car . . . cause that is my friend. So when you see me and that car ain't running, don't ask me for no money, cause I ain't got none to spare. You hear me. Jesus Christ — the hardest thing He had to do in His life was to walk from Bethlehem to Jerusalem . . . so you know I don't like to walk too damn much!"

Street Corner Stories was filmed over several weeks and focuses on the men who congregate on a street corner before going to work. As the men share conversation and tell stories, what is taking place is an informal critique of a wide range of personal experiences. The storytellers create a highly stylized recollection of experience through stories that mock, understate, exaggerate, critique, and generally confront the listener with the events and circumstances of their lives. The stories blend the tragic with the comic in a vision that is both tough and irreverent. This is a vision that is rooted in the blues.

Ralph Ellison defines the blues as "an impulse to keep the painful details and episodes of a brutal experience alive in one's aching consciousness, to finger its jagged grain, and to transcend it, not by the consolation of philosophy, but by squeezing from it a near tragic, near comic lyricism." Blues

"I don't believe the system is really concerned about us . . . when they deny me benefits that I'm entitled to legally from the unemployment compensation bureau. When they deny me benefits because of a small technicality, make me fill out a form with a blank piece of paper to deny me . . . I got six kids who are hungry and need food. I think this is a tragedy. I can no longer believe in a system that takes from me illegally . . . If she had did it legally, I would have accepted it . . ."

"But who pulled us through? Kennedy!"

"He's dead."

"But he did help us. He pulled us through!"

"Kennedy was all right. But he is dead now. We need some help now. Kennedy was all right, but I'm not concerned about Kennedy. We need some help now! And no one man can do no great job . . . it takes us all. I'm not concerned about Kennedy . . . I'm not concerned about him."

"I was!"

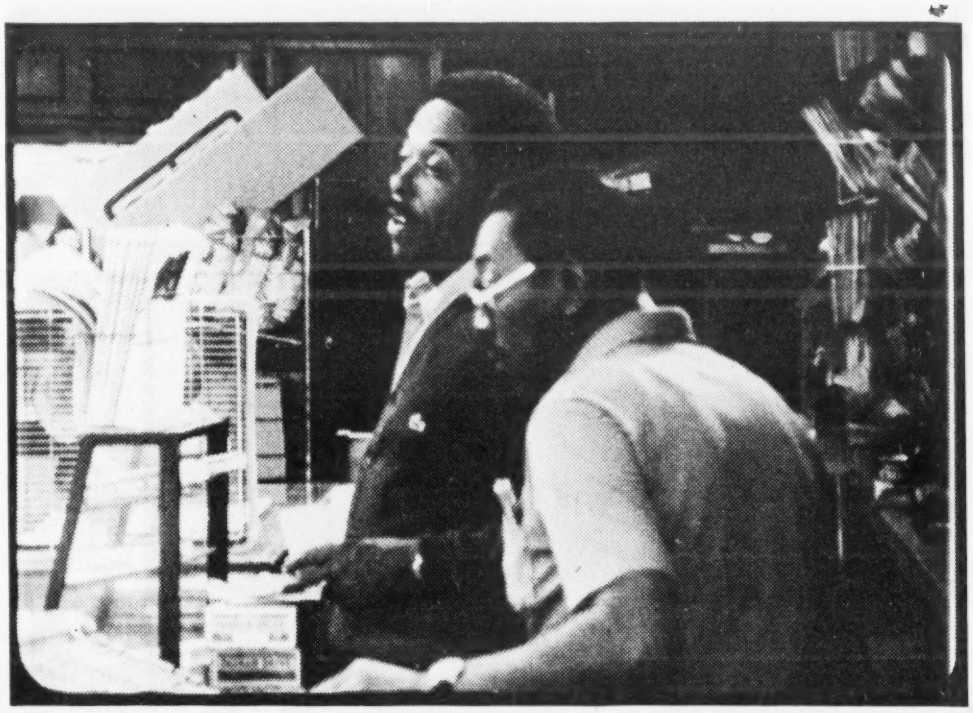
[more →]

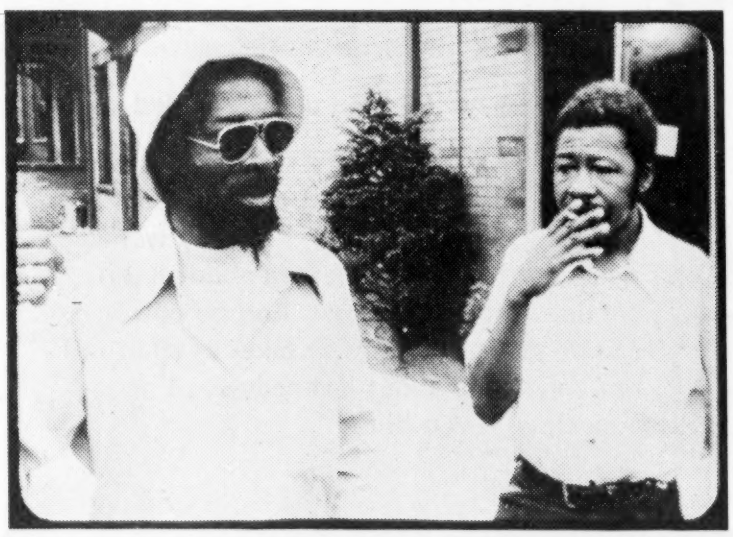
defined this way is not merely a musical form, but an attitude and style of life. Style takes on an existential quality as it acts as an anchor and allows the individual to weather personal catastrophes, social oppression, bad luck, and hard times.

The oral tradition is central to Black culture, both in Africa and America. If we as a people have a collective wisdom, it's not going to be found in the public library. It will be found in places like the street corner, where people meet and share conversation. The "cinema verité" form provided a technique to capture this tradition and present it in context. My goal was for **Street Corner Stories** to be a look out from, as opposed to a look into, the street corner. I guess on one level, making this film was my gesture to acknowledge a tradition I hope to extend to film.

—Warrington Hudlin

"All the squares I know are doing good. People used to go around saying, 'Why you hanging around with that square mothafucka', all that old stuff . . . All the squares I know right now are doing good. Got a nice house, two cars, home, family, send their kids through school . . . all the squares! The hip ones are still out here talkin that same shit, 'Hey baby, what's happenin, how's everything.' Let me tell you, I want to be a square all my life. All my life I want to be a square. Cause all the hipsters are doing bad."





"All I want when I'm drinking is a bottle and a pack of cigarettes. So far as food . . . I don't eat it. The doctor said I can live nine days on water alone and I damn sure done did it. Hell, I lived for three months up there just on . . ."

"On nothing but vodka."

". . . about three meals every two weeks. Just like I was confined somewhere. The rest of it was booze . . . They asked the doctor when I went to the hospital, 'How can he live so long without eating?' Doctor said, 'Alcohol has so much vitamins in it to hold you up.' But I was losing weight like a mothafucka. I went down from a hundred fifty-nine to one hundred pounds."

"What did Kelly use to call you?
'Walking Death'."

"Yeah. It use to make me so mad I wanted to cut his throat."

"But you wasn't strong enough to."

"I could hardly make it and he come talkin about, 'Good morning, Death.' I felt like openin that sonabitch up! Made me mad."

"But Curt, you was in bad shape. You couldn't even come out the house. You would throw the money out the window and send somebody to the package store."

"Poor little Cleo, God bless him . . . After seeing me, I would say, 'Hey Click-Clack, c'mere.' I'd drop him the money. 'Get me a fifth.' He'd go to the liquor store and get me a fifth. He'd bring it upstairs and I'd buy him a pint of wine . . . I'd be so damn weak, I couldn't get out of bed. I'd reach down, open the bottle, raise up on one elbow, and drink . . . I couldn't even go to the bathroom! I had to get help to go to the bathroom . . . I didn't give a damn . . . as long as I got my booze . . . fuck it."

"If you want to talk about somebody that will get you . . . and I mean beat your ass! The first time they busted me, we went up to the precinct on Florasent Avenue, 88th precinct . . . Them mothafucka took me in the goddamn back . . . Naw, first they took me inside. They had found a little bag of smoke. I wouldn't tell whose smoke it was, and the other two cats wouldn't say shit. So the mothafucka says to me, 'C'mere.' I says, 'What? What do you want?' He says, 'Go into the bathroom.' I said, 'I ain't got to go to the bathroom, Jim, there ain't nothing wrong with me.' He said, 'Go into the fuckin bathroom, you heard me!' So all four of them come into the fuckin bathroom. I'm standing by the fuckin commode. He says, 'Whose fuckin smoke is it?' I said, 'I don't know, it ain't mine. You found the herb, not me.' He said, 'You mothafucka!' and hit me in my mothafuckin head. The other cop said don't hit him in the mothafuckin head, hit him in the side . . . you know he got to go to court in the morning. *[laughs]* They punched me in the ribs and every damn place . . ."

"I use to have to walk three miles to school. We used to have to milk the cows before we went to school in the morning, feed the chickens, hogs, everything . . . So I asked my poppa, 'Hey poppa. I want a nickel.' He said, 'When you go up to the house, change your clothes, wash up, look into my pants pocket and get you a nickel.' Shit, I looked in his pants pocket, he had about 85 cents. I took me a dime! I said he wouldn't miss it. I'll have a nickel for me and a nickel for my girl . . . I went to school that day and no sooner than I come back, he done told mamma that it was a nickel missing. Mama whipped my ass! My father didn't get into the house until about ten o'clock that night. I had gone to bed. Boy, that man got me out of that bed. And I thought he was tired from workin all day. If that man didn't whip me . . . I mean until he got tired again! And from that day on, take something? Shit, not no more, baby!" ■

A REASONABLY GOOD TIME *by Joe Bacon*

Lunch hours are pretty good these days at **CQ**, *but seldom as great as 1974 when Joe Bacon was typesetting the* **Whole Earth Epilog** *We would all gather at a neighboring shack on Napa Street Pier and choke up our fancy French soup from Soupçon laughing at Joe's stories. Since he lived in the country then, most of the tales were from his youth in the great state of New Orleans. Last year or so he moved into the heart of the gay community in San Francisco and recently responded this way to my invitation to write us some stories from there. Reader, let us know if you want more.*

–SB

Monday, March 6, 1978

Dear Stewart:

You wouldn't believe what a boring weekend I had. Thank God it's over. At least during the week you don't have to feel guilty about not having a good time. Dorothy Parker once said that if you make up your mind you're not going to be happy, there's no reason why you shouldn't have a reasonably good time. . . .

When I got up Sunday morning I made a pot of coffee and sat down with the Sunday paper. The only interesting thing I read was a story about Edna Ferber. I'd never read anything about her. Have you? She never married and she lived to be in her late eighties and she had a long-time feud with Alexander Wollcott (are you going to check for spelling before you print this stuff?) and one time at a party or somewhere she and Wollcott were having words and Wollcott said to her, "You almost look like a man." And Ferber said to Wollcott, "So do you."

Sunday evening was lovely. Drinks and dinner with my landlords upstairs. Want to know what I did after dinner? I went back down to Castro Street.

Your friend

Tuesday, March 7, 1978

. . . Did you see any of the ballet when the American Ballet Troup was here? My friend Dark called Saturday morning and he had tickets for that night and asked me if I wanted to go. He had probably asked someone else to go and they cancelled out on him and that was why I got the invitation so late. But I didn't care. I wanted to see the ballet. We had good seats, seventh row orchestra, but the only problem was they were all the way to the left and when they were dancing extreme stage left we had to use our imaginations. Cynthia Gregory was incredible and of course it was local-girl-makes-good week and the audience loved her. And that kid Bujonnes. I know you aren't interested in this sort of thing, but he had buns you could crack a tooth on. Regardless, I tried to concentrate on the cultural aspects of the evening.

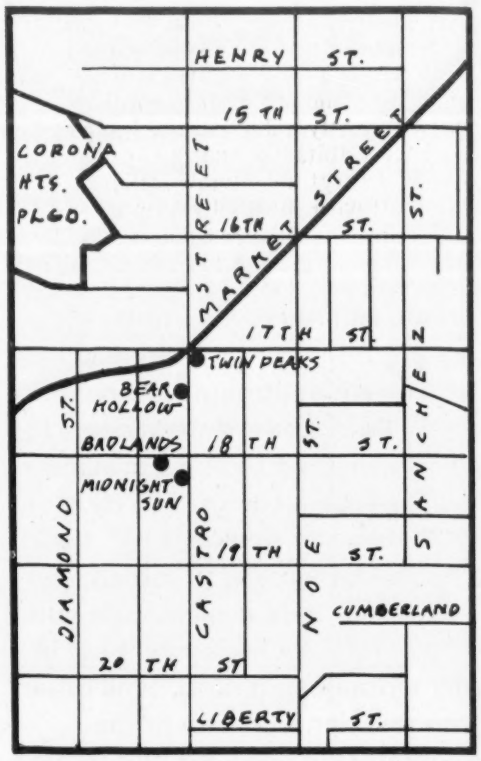
After the ballet Dark and I went to a new bar called the Alta Plaza that is the current rage of the Pacific Heights queens. And my dear, they were out in droves. All of them dressed to the teeth. There were so many initials in that room it was like swimming in alphabet soup. After one drink I told Dark I was feeling entirely too fragile for that place and we left. So I dropped Dark off at his place and went to the Twin Peaks, the gay fern bar. I was still feeling pretty fragile but I managed to pick up a trick and drag him home. After a couple of romps on the mattress and a reassuring sleep next to a warm body I woke up the next morning feeling much better.

Your friend

Monday, March 13, 1978

. . . I had an Aunt Opal and an Uncle Preston that tried a variety of ways of coping and I'll tell you about a lot of them later, but there's one I want to tell you about today. When I was a kid Aunt Opal would call me on the telephone when she was having one of her sinking spells and ask me to come over and play Beethoven Sonatas on the piano for her. One day I was over there, I couldn't have been more than ten years old, and Aunt Opal was reclined very dramatically on the sofa, a Victorian sofa upholstered in red velvet, and I was playing Beethoven Sonatas to soothe her jangled nerves. In wanders Uncle Preston with his arms outstretched. There were a couple of parrots and a macaw on one arm and a couple of cockatoos on the other. At that time he had the largest hook-billed bird collection in the South. Anyway, when Aunt Opal caught sight of him she bolted upright on the sofa and screeched, "Preston, those goddamned birds can shit all over your office and they can shit all over your car, but I'll be goddamned if they're going to shit in my living room!" Uncle Preston wandered off with his birds, Aunt Opal nestled back down into the sofa and I did not miss a single note during this whole episode. It wasn't until about twenty-five years later, when I'd left the South, that I realized this was a weird incident. . . .

Have you ever felt that you are two people? That two distinct entities dwell in your body and in your head? I do. One is a bon vivant, the other is quite stodgy. When the bon vivant goes out and gets drunk the old fogey inhibits him to the point where he is totally incapable of initiating any sort of conversation with people he finds attractive. So the poor bon vivant quietly gets drunk enough to be sure he'll sleep through the night, gets in his car and drives home alone. I think it's the old fogey that's responsible for this "middle-age-crisis." He loves that fact that I'm 40. He even gloats over it. He's got the bon vivant retreating into his shell; going out less often, seeing fewer people socially. But maybe this is good. Maybe it's



time the bon vivant starts slowing down a bit. If he does, though, that fucking fogey had better come up with something more positive than gigantic doses of guilt and negative feelings. Like encouraging and helping the bon vivant write. . . .

Your friend

Thursday, March 23, 1978

Dear Stewart:

For the past couple of weeks I've been very good, i.e., I have not gotten drunk on Castro Street after work. So yesterday after work I started out at the Twin Peaks. Had about 5 vodka tonics there and a couple of beers. Then I hit the street: Bear Hollow, Midnight Sun and the Badlands. Then back to the Midnight Sun, Bear Hollow and Twin Peaks. Why do I do this to myself? I called Dark when I got home and I'm going to have to call him again today to find out what we talked about.

Today I had lunch at Mozell's on Divisadero. Soul food. I was grown up before I knew there was any other kind of food than soul food. Except we didn't call it soul food. We just called it food. I had fried chicken, blackeyed peas and collard greens. And a Coke. When I lived in Dallas a group of us had lunch one day at a soul food place that had been highly recommended. The menus were written on black boards hanging above the booths and when I ordered a chicken fried steak the waitress threw an old damp dish cloth at me and said, "We're out of that. Wipe it off."

A friend of mine's family in Elmview, where I grew up, had a grocery store. This has nothing to do with soul food, it just popped into my mind. Anyway, right after we got out of high school Alvin's father, Alvin was my friend, was trying to teach him how to run the store and one of the first things he let Alvin do was to make the weekly order of groceries. That was when

Alvin made his first big mistake. He ordered a case of olives stuffed with onions and a case of olives stuffed with almonds. The problem being that Elmview is mostly a dry Baptist town and cocktail tidbits like that just don't move. Everytime Alvin's father passed the shelf with those olives on it he'd say, "Shit." Another time, right after he got out of butchering school, Alvin got his finger caught in the meat grinder and ground off the tip of one of his fingers. They said he passed out and when he'd start coming to he'd see the blood and pass out again. I understand he passed out three times.

A lot of times on Saturday afternoons I'd stop by the store to visit and while Alvin was checking people out I'd bag the groceries. Saturdays were the days when the people from out in the country would come to town to do their shopping. Most of those old gals out there in the country dip snuff but they don't like to admit it when they get to town. One day Alvin was checking a lady out and I was bagging the groceries and when Alvin had everything rung up he said, "Lucille, is that all?" And Lucille said, "Naw, Alvin, my sister-in-law said Lucille since you're going into town why don't you get me some snuff. You know I don't use it myself but my sister-in-law does." So Alvin said, "What kind of snuff does your sister-in-law use, Lucille?" And Lucille said, "Ah, Alvin, I can't remember the name of it. I guess I could if I used it myself, but like I said, I don't. But I think it was something that starts with a g. Is there any snuff that starts with a g?" Alvin said, "Garrett?" And Lucille said, "Well, that sounds close. Why don't you give me some of that. If that ain't it it'll be close enough for her." Then Alvin said, "Sweet?" Lucille shrieked, "No! Bitter! She don't like sweet!"

The settlement where Lucille lived was about ten miles out of Elmview on the Whiskey Chitter River. It was called Cherry Winchie. There was a family of Wares that lived out there, too. Old John Ware and his wife and their 12 kids. The kids all quit school when they were sixteen except for his boy Earl, the youngest. What kept Earl in school was football. He made the team and was the only one of John Ware's kids to ever finish high school. Old John had never heard of football before his boy Earl started playing. So after hearing about it he decided to come into town and watch them practice one afternoon. He and the janitor, Papa Joe Mizell, were good friends and John would talk to Papa Joe and Papa Joe would tell us later what old John had said. After watching them practice the first time John told Papa Joe, "All them boys got out there on the pasture and one of them throw'd that ball between his legs and after that I didn't know where that ball went. But them boys know'd." Papa Joe tried a bit to explain football to him, but John interrupted him and said, "One time they throw'd that ball to my boy Earl and he struck out running 'cross that pasture and about five of them boys jumped on him and throw'd him to the ground and Earl just got up and run off. He didn't even want to fight 'em.

Then there was Gage Cloud and his wife Marthy Jane. One day when she was in Elmview Marthy Jane bought a radio. When she got back out to Cherry Winchie she plugged in the radio and started doing her ironing. Pretty soon they started playing some good hillbilly music and Marthy Jane reached over and unplugged the radio and said, "I'm going to save that for when Gage comes home."

The couple I liked best in Cherry Winchie were two sisters; Locide and Lulu Rodriguez. Except they pronounced Locide as Lokide and Lulu as Luler and Rodriguez as Roadriggers. Locide was tall and skinny and Lulu was short and fat and they both wore long black cotton dresses and sun bonnets when they came to town in their horse and buggy. Locide could cure warts. In fact, she used to brag that she "could cure anything but she weren't going to cure no more warts 'cause everytime she cured one off someone, hit'd come on her." Vivian Jarnigan, who was a teller in the bank, told me she drove an old aunt of hers out to visit with Locide and Lulu and as they were inquiring about each other's health her aunt said something about a lump in her breast. Vivian said Locide told her to "step over there behind that stove and pull that tittie out and I'll cure hit right now."

Stewart, it's almost five o'clock. Bye. ■

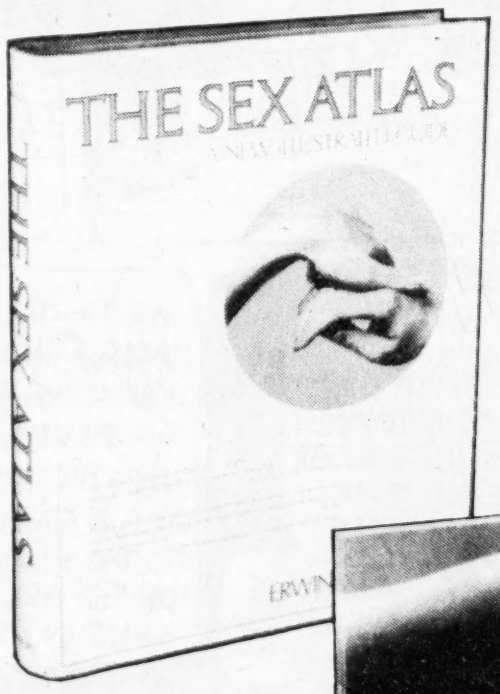
The Sex Atlas
Human Sexualities

No field of social research deserves as much praise and recognition as the field of sexology. Sex therapists are now able to treat, with better than 90% success rate, pre-mature ejaculation, secondary impotence in men and what used to be called inorgasmia in women (this treatment is so effective, the term is now "pre-orgasmic" women). Such success occurs in a field where medicine and psychology have been unsuccessful for 75 years. Sexologists and therapists have also eliminated the need for treatment of two other long-standing medical/psychological concerns, nymphomania and homosexuality. Both are now relegated to the realm of problems "doctors created for their patients."

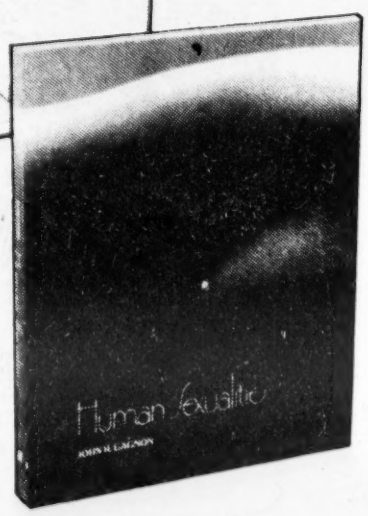
Maybe the greatest success of sexology is the dramatic improvement in the accuracy of publicly available information on sex. In the early '60s, **Playboy** *was full of physiological errors and unconscious Puritan value judgments; Dr. Reuben published* **Everything You Want to Know . . .** *with factual errors on nearly every other page. Today, 1978, the situation is completely changed: even* **Hustler** *is technically accurate in information page after page, issue after issue.*

The very best written summary of the whole body of research and knowledge which formed the basis for the current 15-year revolution in sex information is to be found in Erwin Haeberle's **The Sex Atlas.** *It is as complete as possible at this moment in time, and knowing current research projects, I don't expect it to be out of date long in the future. It is the outstanding textbook in the field of sexology and with its clear writing style and large number of good photos is comfortable reading.*

Human Sexualities, *by John Gagnon, is based on the same empirical findings as Haeberle's* **Atlas** *but it is put into a sociological framework. Gagnon's book is easy to read with a very clear style, humor, and good photos.* —*Michael Phillips*



The Sex Atlas
(A New Illustrated Guide)
Erwin J. Haeberle
1978; 509 pp.
$25.00
postpaid
from:
The Seabury Press, Inc.
815 Second Ave.
New York, NY
10017
or Whole Earth



Human Sexualities
John H. Gagnon
1977; 432 pp.
$9.95 postpaid
from:
Scott, Foresman & Co.
1900 E. Lake Ave.
Glenview, IL 60025
or Whole Earth

Dan O'Neill's Four Pages . . .

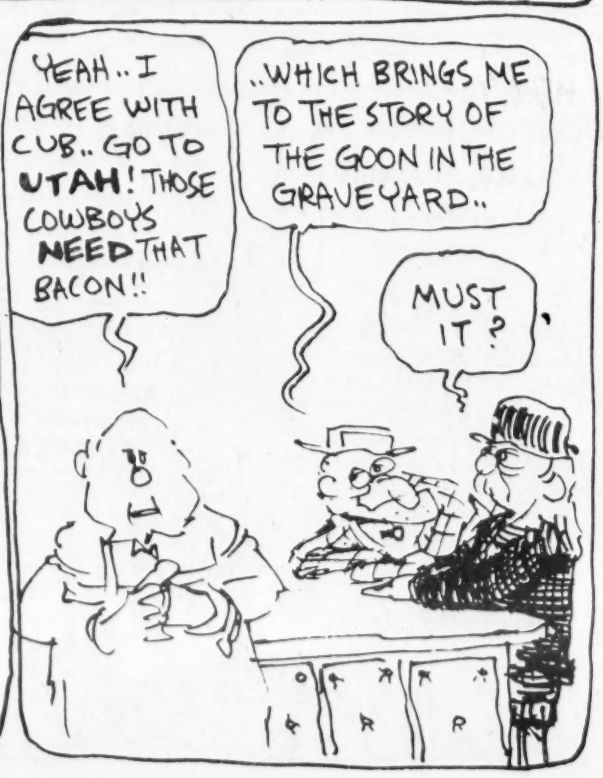
YOU MUST ADMIT.. UTAH, DESPITE THOSE CRAZY MORMONS AND HUNGRY INDIANS IS NOT AS BAD A PLACE TO RAISE HOGS AS DOWN AROUND THE DEAD SEA RIGHT NOW WITH THOSE TANK BATTLES AND ARTILLERY FIRE..
GIVE HIM ANOTHER, JOE, SO'S WE'LL KNOW WHAT HE'S TALKING ABOUT..

FOR THOUSANDS OF YEARS, ARMIES HAVE BEEN MOVING THROUGH THAT AREA ON THEIR WAY TO ATTACK SOMEONE ELSE! IT'S A NATURAL CORRIDOR BETWEEN ASIA AND AFRICA..
UTAH IS A NATURAL CORRIDOR BETWEEN ASIA AND AFRICA ??
THAT'S NEWS TO ME..
VILES!

NOT UTAH! ASIA MINOR! WE'RE TALKING ABOUT THE DIFFICULTIES OF HOG RANCHING IN ASIA MINOR...
OH..

..AS OPPOSED TO RAISING HOGS IN UTAH.. IF YOU MUST RAISE HOGS, DO IT IN UTAH INSTEAD OF THE HOLY LAND.. THE HOG BUSINESS IS TOUGH IN THE HOLY LAND..
WELL! THAT SURE IS GOOD TO KNOW.. YEP! WHY.. EVERY NOW AND THEN, I GET THIS URGE TO RAISE HOGS IN THE HOLY LAND..
I DIDN'T KNOW YOU WAS GOING INTO HOGS, SHERM..?

SEEMS TO ME, SHERM, THAT YOU'D BE MAKING A MISTAKE HOG RANCHING IN THE HOLY LAND.. NONE OF THOSE FOLKS EAT PORK! WHERE'S YOUR MARKET?
JOE,, I DON'T KNOW WHAT EITHER OF YOU ARE TALKING ABOUT !!
..FOR MOST FOLKS IN THE HOLY LAND, EATING PORK IS A SACRILEGE..


YEAH.. I AGREE WITH CUB.. GO TO UTAH! THOSE COWBOYS NEED THAT BACON!!
..WHICH BRINGS ME TO THE STORY OF THE GOON IN THE GRAVEYARD..
MUST IT ?

FINALLY!! TELL ME THE STORY OF THE GOON IN THE GRAVEYARD!!
FIRST, I HAVE TO TELL YOU ABOUT THE HOG RANCHER IN JORDAN..
HIS RANCH WAS NEAR THE SEA OF GALILEE.. GOOD SPREAD.. AND HE HAD TWO THOUSAND HOGS.. READY FOR MARKET.. A SHORT DRIVE TO THE MED.. AND HE'D BE SOLVENT!
HE HAD A LARGE FAMILY.. AND FOLKS WORKING FOR HIM.. BUT HE WAS HOG POOR.. LOTS OF HOGS... NO SHOES.. BUT THIS YEAR HIS LUCK HAD CHANGED.. THIS HERD LOOKED FAT! THIS YEAR HE WOULD PAY THE MORTGAGE..
WELL.. HE WAS OUT THERE COUNTING HIS HOGS AND THINKING ABOUT HIS SMALL PROFITS.. WHEN HE NOTICED A CROWD OF PEOPLE OVER BY THE OLD GRAVEYARD...
..AH.. THE GRAVEYARD..
UH OH...
" HOGS ARE SPOOKY.. THIS GUY WAS UNDERSTANDABLY NERVOUS.. STRANGERS AROUND YOUR HOGS ARE DANGEROUS.. "
HEY! GET OUT OF HERE! YOU'RE BUGGING MY HOGS!!
BE SILENT! THE MASTER IS GOING TO UNGOON THE GOON..
HEY! YOU! GET OUT OF THAT TREE!
TO WHICH ONE OF US ARE YOU SPEAKING, MASTER..
THIS GOON HAS BEEN GOONING AROUND THIS GRAVEYARD FOR YEARS!
IT SURE IS AN UGLY GOON!
THIS WILL BE SOME TRICK!!
THE GOON IS GOING TO TO BE DEGOONED!

WHY PICK ON THE GOON? HE'S HARMLESS.. AND THE HOGS LIKE HIM.. RIGHT?
HE'S A MUNICIPAL DISGRACE!!
YOU'RE A HOUSING DEVELOPMENT?
FOR A LEGION OF SPIRITS?
YEP! THERE ARE A HUNDRED AND SEVENTY FIVE DEVILS, IMPS, AND DEMONS LIVING INSIDE ME..
WHAT'S HE SELLING?
EVEN IF THE STRANGER GETS RID OF THE DEVILS, THE GOON WILL STILL BE UGLY..
HE'S NOT SO BAD OFF.. HE DOESN'T HAVE TO LIVE WITH YOUR MOTHER!
SOME SORT OF ETERNAL LIFE INSURANCE..

IT HARDLY SEEMS FAIR.. KICKING US OUT!! WHAT DID WE DO TO YOU?
I'LL MAKE A DEAL WITH YOU.. GET OUT OF THE GOON AND GO LIVE IN THOSE HOGS..
MY HOGS! THEY'VE GONE CRAZY!
ISN'T THAT NICE.. A BLESSED MIRACLE!
HEY! I'M CURED!
"WELL, SHERMAN, UNLIKE PEOPLE, HOGS DON'T MIX WELL WITH DEMONS, SO THE WHOLE HERD STAMPEDED OVER THE CLIFF INTO THE SEA AND DROWNED.. OUR FRIEND, THE HOG RANCHER, WAS WIPED OUT!"

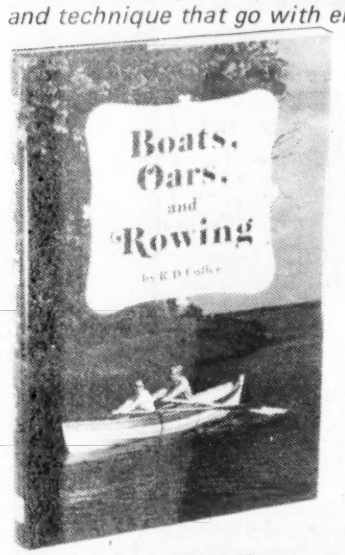
THE STRANGER AND HIS DISCIPLES WERE FORBIDDEN TO EAT PORK BY THEIR RELIGION.. THIS EXPLAINS THEIR LOW REGARD FOR HOGS... WORSE YET, FOR SOMEONE ELSE'S HOGS.. FOR THIS LACK OF MANNERS THE HOG RANCHER AND HIS FRIENDS TRIED TO LYNCH THE STRANGER.. BUT THEY FAILED..
I HOPE SOMEONE GETS THAT GUY!!
YESSIR.. THERE I WAS.. GOONY AS THEY COME.. THEN ONE DAY THIS STRANGER SHOWED UP..
SOMEONE DID GET THE STRANGER A BIT LATER.. AND THE HOG RANCHER WASN'T A BIT SORRY.. "HE WAS FROM MY POINT OF VIEW A WALKING DEPRESSION.. HE COST ME TWO THOUSAND PRIME HOGS!".. THE GOON, NOW, HE PROSPERED.. WENT ON SPEAKING TOURS.. WROTE A BEST SELLER.. "GOON.. A PERSONAL POINT OF VIEW" HEE HEE
THIS MIGHT BE A REPUBLIC.. AND THAT MIGHT BE YOUR POINT OF VIEW.. BUT THIS IS STILL AN IRISH BAR, CALLOWAY.. NOW CLEAN UP THE CONTENT OF YOUR STORIES..

Nomadics

Boats, Oars, and Rowing

O boy.

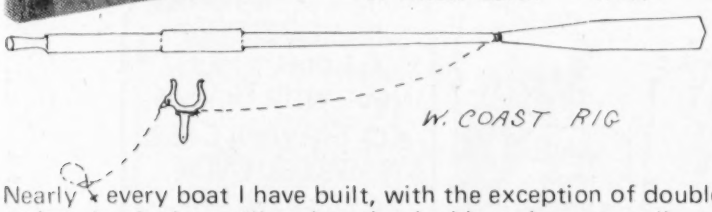
R. D. Culler of Cape Cod, who designed the 18-foot Concordia sloop I sail in Canada, who wrote the worthy **Skiffs and Schooners**, *here holds forth on the nice details of design and technique that go with enjoying a good pulling boat.*



Rowing is coming back these days. It beats jogging for exercise, pleasure, and getting into interesting trouble.

—SB

Boats, Oars, and Rowing
R. D. Culler
1978; 149 pp.
$8.95 postpaid
from:
International Marine Publishing Co.
21 Elm Street
Camden, ME 04843
or Whole Earth (???)



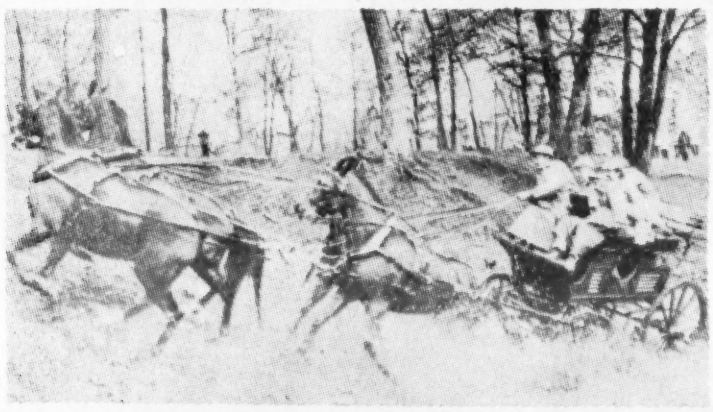
Nearly every boat I have built, with the exception of double-enders, has had a sculling slot; the double-enders can well have an oarlock socket blocked out to be used in place of a slot. Personally, I like the looks of a slot, besides admiring its practicality and simplicity. For those who don't like them, an oarlock socket can usually be placed in any stern. In this country, the slot is usually in the center of the stern; in many other countries, notably the Bahamas, it is offset to port for a couple of good reasons — to account for the method of sculling, which is different from ours, and to allow the oar to be used with a rudder in place, so a sailing craft can be helped out in a calm. Regardless of locality and tradition, I think any small sailing boat should be rigged this way. I don't know which came first, the off-set slot or the stroke of the oar that seems best suited to it. However, I can say that the Bahama method, once you adapt to it, is far superior in most boats to the accepted Yankee method.

The Carriage Journal

The quarterly magazine of the Carriage Association of America, Inc. Each issue fifty pages containing illustrated articles on horse-drawn carriages, their construction and makers, collections, restoration, harness, etc.

—Dave Patty

The Carriage Journal
$20.00 /yr, includes membership
from:
H. K. Sowles, Jr.
Secretary/Treasurer
Carriage Association of America
P.O. Box 3788
Portland, ME 04104

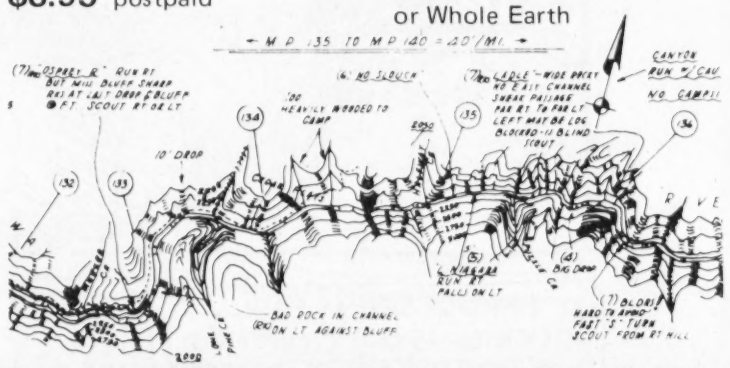


"Frolic" Weymouth driving his Standardbred team out of No. 1 hazard, the "Drink at the Water."

The Canoeist's Catalog

Canoe know-it-alls will soon find out that they don't quite when they thumb through this marvelous collection of gear, boats, maps and other necessities of the trade. It's the only place that you can find all this information in the same box, so comparisons can easily be made. A ver much needed service, very well presented by people who know what they are talking about. *—J. Baldwin*

The Canoeist's Catalog
William F. Stearns and
Fern Crossland Stearns, Eds.
1978; 191 pp.
$8.95 postpaid
from:
International Marine Publishing Co.
21 Elm Street
Camden, ME 04843
or Whole Earth



Twenty maps of rivers in the Colorado River Basin, the Idaho-Wyoming Snake River Basin, the Rogue and McKenzie in Oregon, the Fraser, Canoe, and Columbia in British Columbia are currently available in a series. The maps look like a draftsman's labor of love. A scale of more than an inch to a mile, together with many comments based on experience on the river, campsite locations, rapids and their ratings, make these maps extremely useful for some big water travel. They have an excellent reputation for accuracy.

It is the physical form of the maps that makes them intriguing: a scroll format, printed on waterproof Mylar, with a river profile paralleling the contour map of the river. The whole thing is packaged in a sealable plastic bag that allows the map to be rolled (or unrolled) to expose several miles of river. It is an idea that more mapmakers should use.

Leslie A. Jones
Star Route Box 13A
Heber City, Utah 84032

Air Gun Digest

Just about everything that's known about buying, shooting, and caring for pneumatic guns is in this handsome, fat book. The author is one of the persons responsible for bringing modern air guns to this country from Europe (EPILOG, p. 665). Such weapons are a far cry from the Daisy with the bent barrel that you remember from childhood. The better grade of gun is cocked in one motion, nearly silent, and more accurate than most equivalent firearms. For varmints there's nothing better. Everything is illustrated. (Did you know that Lewis and Clark carried a powerful air gun on their expedition?)

Air Gun Digest *—J. Baldwin*
Robert Beeman
1977; 256 pp.
$6.95 postpaid
from:
DBI Books Inc.
540 Frontage Road
Northfield, IL 60093

Beeman's Catalog is $1.00 from:
Beeman's Precision Airguns, Inc.
47 Paul Drive
San Rafael, CA 94903

Charter Flight Directory

The annual update of this most useful manual on how to fly cheap. For instance, it is explained how an entire family can fly to Europe for one regular fare! If you're thinking of flying, this book is a must. All current update too.

Charter Flight Directory *—J. Baldwin*
Jens Jurgen
1978; 128 pp.
$5.00 postpaid
from:
Travel Information Bureau
P.O. Box 105
Kings Park, NY 11754

D. Wilde

FREIGHT HOPPING

GETTING ON

by Daniel Leen

When the train is stationary it is interesting to observe the various techniques used to get into an empty; some of the old-timers have a style and economy of movement reminiscent of a ballet dancer. But all I will mention here is to check out your fellow travelers before getting into an empty and never leave your gear untended or it may well be gone when you return from a quick trip to the store.

When the train is moving, however, it is quite a different story. A physical demonstration will teach you more than I can tell you here, so I will limit my advice to a few safety precautions:

1. Always pay attention to the ground ahead of you to avoid tripping on switches, converging tracks, etc., or being blocked by a narrow bridge.
2. If you are getting into an empty, when you toss your pack in make sure that you can pull it back out again in the event that you are unable to climb in after it.
3. Never carry anything in your hands.
4. Always pick a ladder that goes all the way to the top of the car if you have to pick a ladder.

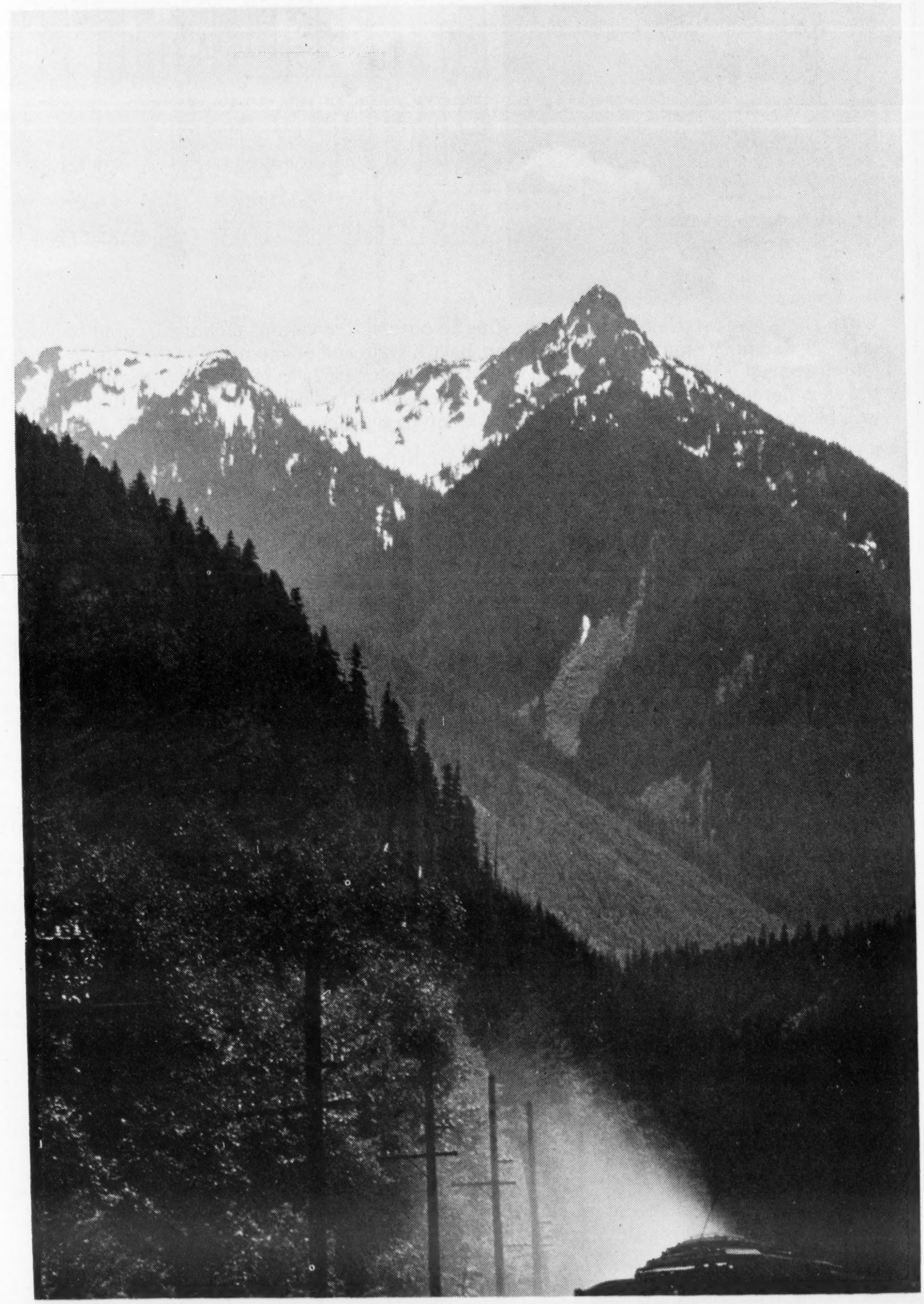
As an example of what can happen when these rules are ignored, a friend of mine and I arrived at the yards just as our train was pulling out. My friend's gear was still partly unpacked so he grabbed his sleeping bag in one hand and, with the rest of his pack on his back, climbed onto the first ladder he came to. Unfortunately it was a short one and he was unable to move because of his load. In the meantime I had climbed to the top of my boxcar, hooked my pack to the catwalk, and climbed back down to take his sleeping bag, but he was no longer there. By this time the train was going too fast for me to get off. Later that night I learned by telephone that he had been knocked off by a narrow bridge, eventually finding his way to a nearby gas station to phone a friend, although he remembered nothing after getting onto the train. He wasn't hurt seriously, but the money he spent on his stitches would have bought him a first class ticket all the way; no doubt this would have hurt a pro just as badly as the bump on the head.

In conclusion, let me stress: don't try anything that you're not absolutely sure that you can do. This brings to mind a trip I once made with a friend who had studied philosophy in college. We were rolling along at about 5 mph, drinking Chianti when he asked me if I could get off and back on at that speed. I replied that one could, but in view of our present degree of inebriation this might not be the best time to practice. My friend leapt out of the car, hitting the ground in perfect stride and yelled, "Now how do I get back in?" After we practiced lifting one another back in (timing the helper's tug and the leap so as to effect a vertical jump of about four feet into the boxcar) he turned to me and said, "When you're running on the ground you're in one frame of reference, and when you're in the boxcar you're in another. But when you're leaving one and not yet in the other – that's reality!" I couldn't agree more. ▪

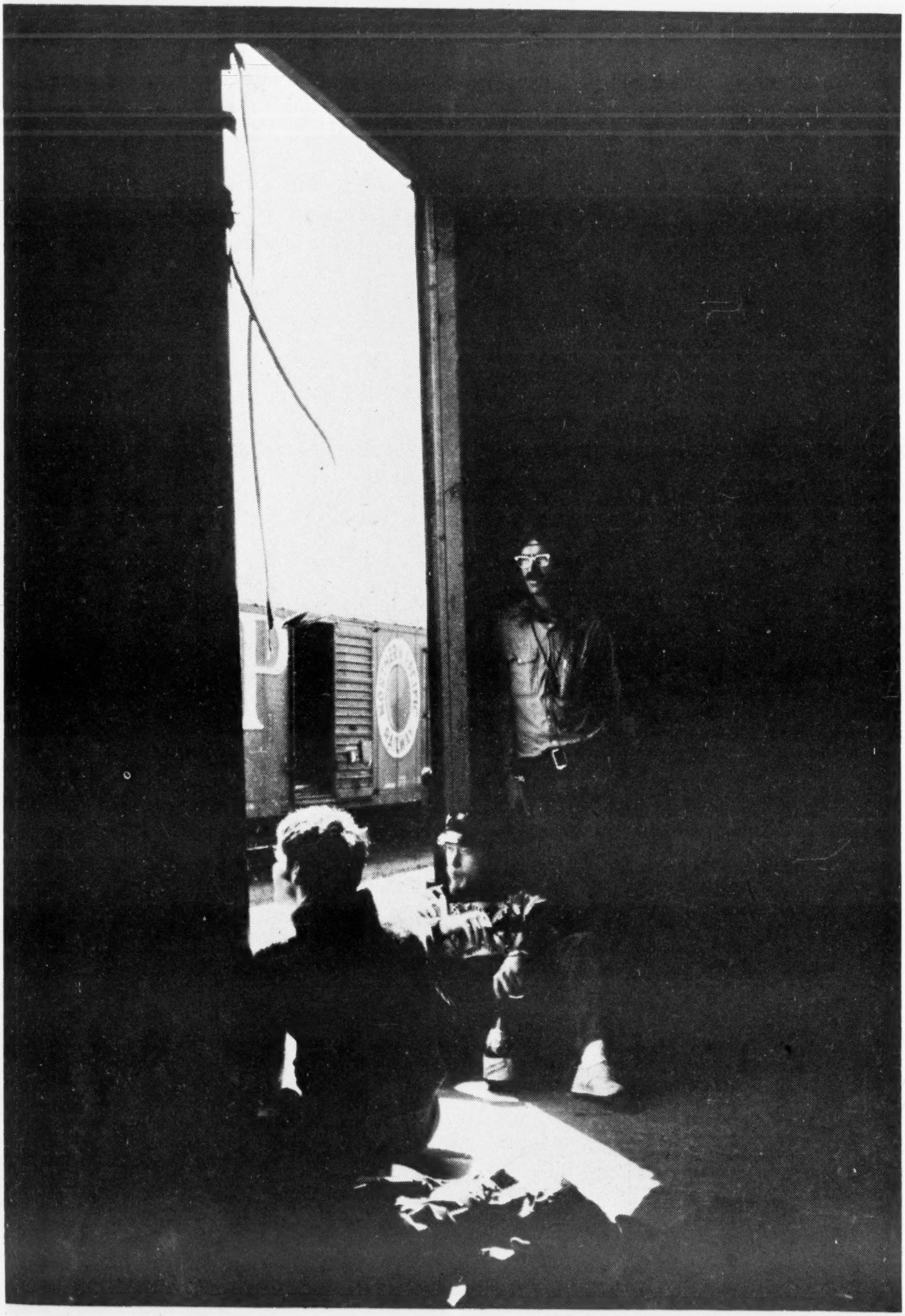
Daniel Leen, between his freights and his Seattle trimaran, lives on $2,000 a year. This here is Chapter Nine of **The Compleat Manual of Freighthopping in North America** *(100 pp., available from Daniel Leen, 6601 116th Ave., NE, Kirkland, WA 98033). The photo above demonstrates his moving-train technique. The two overleaf, by Daniel, show why.*

–SB

FREIGHT



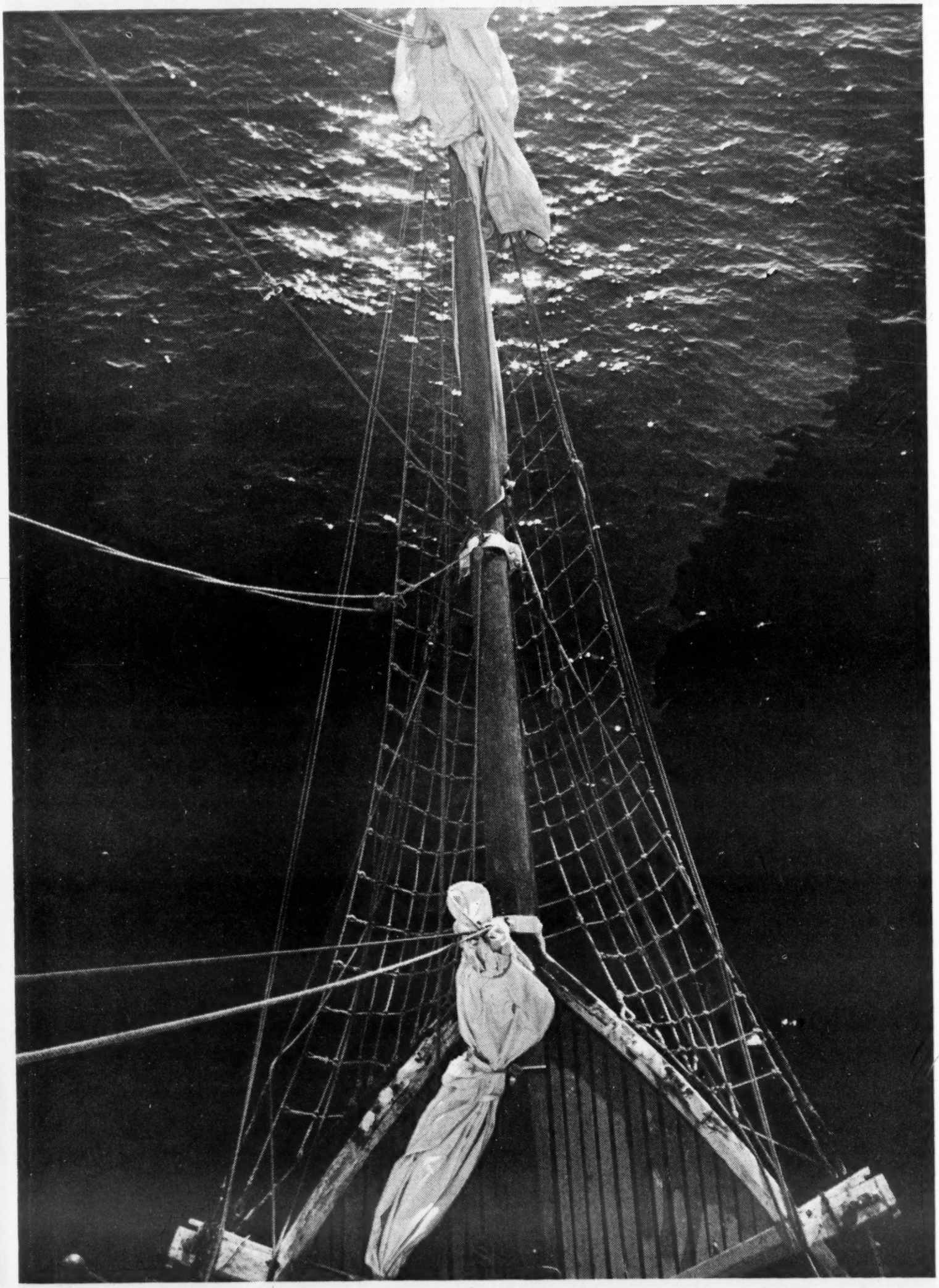
HOPPING



Sofia's

Photographs by Judy Helfand

Foremast



Photographs by Judy Helfand

Box 428, Sausalito, California 94965

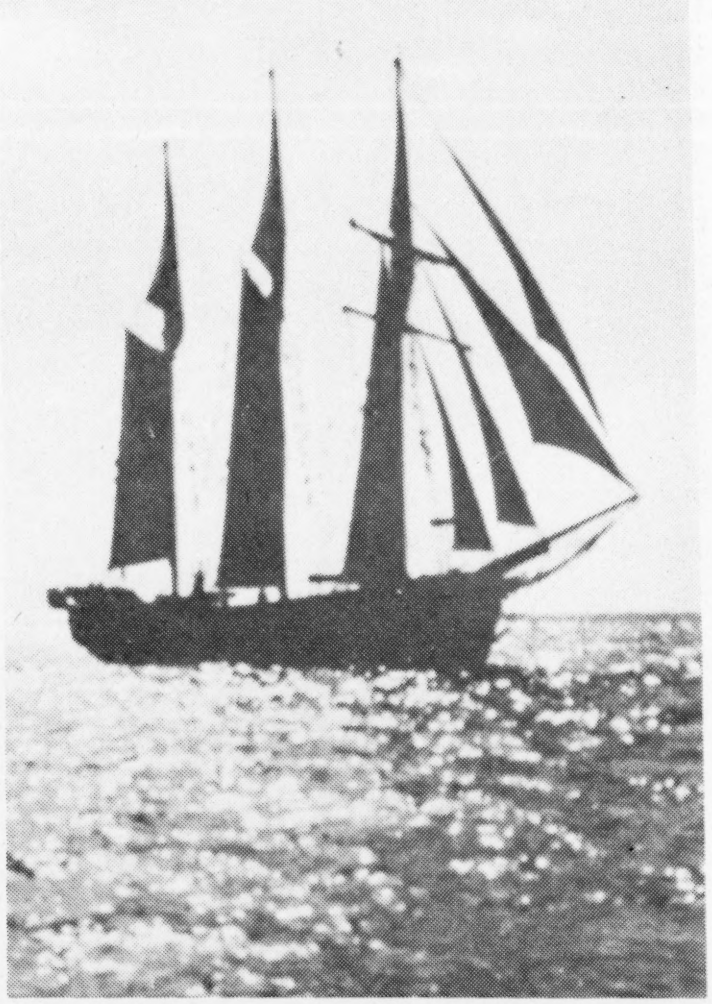
Sofia

This 89-foot three-masted schooner, an infamous sailing cooperative and will-o'-the-sea, is now cruising the U.S. East Coast, recruiting new crew-owner talent. Interested parties may contact: Kansas, 2040 Lawndale Rd., Kenwood, CA 95452 – (707) 833-6477 or (415) 751-3844.

Sofia was built in 1921 of pine on oak, acquired her present engine in 1938, and her present myriad of owners in 1969 (for $7,000). From 1971 to 1976 she made an around-the-world meander.

Here is some account of that voyage, by Rob Turner.

–SB



At night the planktonic phosphorescence lines our wake with light. But the molten glassy waves thud against the hull and seams work, salt water seeps in and rises in the bilge. A midnight squall blows the foretopsail into flags. Worms munch on the keel. Stays rust, bearings fuse, bribes and slip fees mount. The crew, sharing clothing when it's needed and buying bulk foodstuffs in portside warehouses, uses about one-twentieth of what Sofia buys for herself. Hardware and sails, maintaining the rigging and holding off rust and rot, these are what cost.

So we become good scroungers. Coastline landsmen and fishing folk have open hearts toward us; we work in their shops on our gear and they tell us where cast-off lumber and metal can be found and what food factories and freighters have abandoned shipments of bent cans of meat, or sell sugar wholesale. Labor is cheap when you do it yourself; most tasks can be done right the second or third time. At least two thirds of our years are spent in port or at anchor at an outlying island repairing broken systems and laying in supplies.

Killed a pig on Cocos island, shark in Cocos bay. No charge. As we drop anchor in Fatu Hiva men come out in outriggers and give us sacks of grapefruit and bananas. Welcome. We visit a man running an island plantation in the Lao group off Fiji who has few guests, no neighbors; he slaughters a wild steer for us to eat. We come to New Zealand through a rarely used channel far from the yacht arenas – the people of the village greet us warmly and give us showers and feasts and paint and jobs. Back in the Kingdom of Tonga we traded feasts with the people, on ship and shore, and could never give as much as we got. They sang better, danced longer, cried more when we left.

Passing Indonesia for lack of a visa, we anchored in Singapore for a month or two of work and then worked through the Molluccan Straits to Ceylon. Money from new crew from Australia and New Zealand kept us afloat until Seychelles Islands where our image finally came into financial play, as the crews of visiting American navy boats hired us for day sails to uninhabited islands for diving and feasting.

100 men a day at ten dollars a head put us on top quickly, and we got lots of beer and hamburgers free.

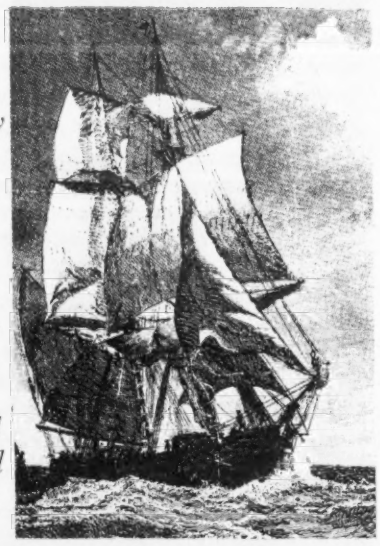
Moving on to Tanzania with a crew now sixty percent female and with two children, we got many supplies cheaply and discovered that Tanzanian craftwork and jewelry doubled its sale value in Kenya. We also sold most of our black coral jewelry in Kenya for pure profit.

Sailing out into the Indian Ocean again on a long tack to Mozambique we lay in there in November of '77 and bought or bartered for carved ivory sculptures and jewelry, baskets, stone eggs and games with agate pieces, much of which we soon sold in South Africa, who cannot deal directly with her neighbors, and when in a few months having crossed the Atlantic to Brazil and come up the sea to Barbados we sold the rest for a 400% profit. Having taken on some new passenger/crew at six dollars a day in South Africa and being in a position to do cargo work and having a tight crew and well-set out boat, we can finally say that we are a self-supporting sailing cooperative.

Sofia, operating as she does on consensus and individual initiative as modified by survival, is a special boat in this world. Someone unfamiliar with the intuitive alertness and love released in these conditions would think she was just lucky. She is more than that, and needs more than that. Right now she needs new blood, as old crew members move out. ■

Alert's Mainmast

In 1834, at the age of 19, Richard Henry Dana left Harvard University and shipped out as an ordinary seaman aboard the brig Pilgrim, *bound for the Mexican province of California. His account of that voyage,* Two Years Before the Mast, *was published in 1840. We join him now on the return leg of the journey, aboard the 113-foot three-masted ship* Alert, *July 19, 1836, off Cape Horn.*



It came on to blow worse and worse, with hail and snow beating like so many furies upon the ship, it being as dark and thick as night could make it. The main-sail was blowing and slatting with a noise like thunder, when the captain came on deck, and ordered it to be furled. The mate was about to call all hands, when the captain stopped him, and said that the men would be beaten out if they were called up so often; that as our watch must stay on deck, it might as well be doing that as anything else. Accordingly, we went upon the yard; and never shall I forget that piece of work. Our watch had been so reduced by sickness, and by some having been left in California, that, with one man at the wheel, we had only the third mate and three beside myself to go aloft; so that, at most, we could only attempt to furl one yard-arm at a time. We manned the weather yard-arm, and set to work to make a furl of it. Our lower masts being short, and our yards very square, the sail had a head of nearly fifty feet, and a short leach, made still shorter by the deep reef which was in it, which brought the clue away out on the quarters of the yard, and made a bunt nearly as square as the mizen royal-yard. Beside this difficulty, the yard over which we lay was cased with ice, the gaskets and rope of the foot and leach of the sail as stiff and hard as a piece of suction-hose, and the sail itself about as pliable as though it had been made of sheets of sheathing copper nailed together. It blew a perfect hurricane, with alternate blasts of snow, hail, and rain. We had to fist the sail with bare hands. No one could trust himself to mittens, for if he slipped, he was a gone man. All the boats were hoisted in on deck, and there was nothing to be lowered for him. We had need of every finger God had given us. Several times we got the sail upon the yard, but it blew away again before we could secure it. It required men to lie over the yard to pass each turn of the gaskets, and when they were passed, it was almost impossible to knot them so that they would hold. Frequently we were obliged to leave off altogether and take to beating our hands upon the sail, to keep them from freezing. After some time, – which seemed forever, – we got the weather side stowed after a fashion, and went over to leeward for another trial. This was still worse, for the body of the sail had been blown over to leeward, and as the yard was a-cock-bill by the lying over of the vessel, we had to light it all up to windward. When the yard-arms were furled, the bunt was all adrift again, which made more work for us. We got all secure at last, but we had been nearly an hour and a half upon the yard, and it seemed an age. It had just struck five bells when we went up, and eight were struck soon after we came down. This may seem slow work; but considering the state of everything, and that we had only five men to a sail with just half as many square yards of canvass in it as the mainsail of the Independence, sixty-gun ship which musters seven hundred men at her quarters, it is not wonderful that we were no quicker about it. We were glad enough to get on deck, and still more, to go below. The oldest sailor in the watch said, as he went down, – "I shall never forget that main yard; – it beats all my going a fishing. Fun is fun, but furling one yard-arm of a course, at a time, off Cape Horn, is no better than *bloody murder.*"

Three weeks later in early August, 1836, well past Cape Horn, Alert *had a different look from aloft.*

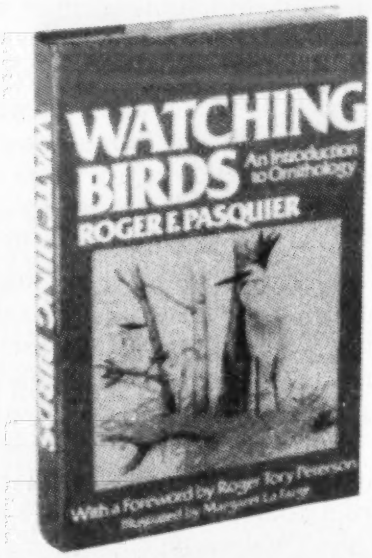
I went to the end of the flying-jib-boom, upon some duty, and, having finished it, turned round, and lay over the boom for a half an hour, admiring the beauty of the sight before me. Being so far out from the deck, I could look at the ship, as at a separate vessel; – and, there, rose up from the water, supported only by the small black hull, a pyramid of canvass, spreading out far beyond the hull, and towering up almost, as it seemed in the indistinct night air, to the clouds. The sea was as still as an inland lake; the light trade-wind was gently and steadily breathing from astern; the dark blue sky was studded with the tropical stars; there was not a sound but the rippling of the water under the stem; and the sails were spread out, wide and high; – the two lower studding-sails stretching out on each side, twenty or thirty feet beyond the deck; the top-mast studding-sails, like wings to the top-sails; the top-gallant studding-sails spreading fearlessly out above them; still higher, the two royal studding-sails, looking like two kites flying from the same string; and, highest of all, the little sky-sail, the apex of the pyramid, seeming actually to touch the stars, and to be out of reach of human hand. So quiet, too, was the sea, and so steady the breeze, that if these sails had been sculptured marble, they could not have been more motionless. Not a ripple upon the surface of the canvass; not even a quivering of the extreme edges of the sail – so perfectly were they distended by the breeze. I was so lost in the sight, that I forgot the presence of the man who came out with me, until he said, (for he, too, rough old man-of-war's-man as he was, had been gazing at the show,) half to himself, still looking at the marble sails – "How quietly they do their work!"

These passages and illustration are from the fine two-volume edition of Two Years Before the Mast, *printed by The Ward Ritchie Press, Los Angeles, 1964, edited by John Haskell Kemble.* –*SB*

Watching Birds

Fills the hole between "sport-birder" fieldguides and heavy-science ornithological textbooks. This delightful volume has abundant attractive drawings to illustrate its points. Current non-technical ornithological principles and concepts neatly embroidered with successful attempts to increase birders' effectiveness as biological interpreters. Concise summaries of giant notions.

—Rich Stallcup



Watching Birds
(An Introduction to Ornithology)
Roger F. Pasquier
1977; 301 pp.
$9.95 postpaid
from:
Houghton-Mifflin Co.
Wayside Road
Burlington, MA 01803
or Whole Earth

In a few monogamous birds that raise more than one brood per nesting season the female may switch mates between broods; this is advantageous if it shortens the time she must spend with the first brood, so that she can begin raising a second. Female Eastern Bluebirds and House Wrens sometimes begin nesting with a second male while the first finishes raising the earlier brood. For these birds, two parents are evidently necessary only in the earlier stages; once the young reach a certain age, one is enough.

Water Birds of California

An exceptionally astute summary of information largely derived from a lifetime of careful bird study by the author. Many secrets, nowhere else in print. Thorough species accounts of 165 regularly occurring wet birds and brief descriptions of 21 rarities. Instructive, multi-headed introduction. Extraordinarily complete, accurate and difficult appendix with graphic calendars and habitat distribution for all species. Twelve pages of color plates and many ink sketches by U.C. Berkeley staff museum illustrator Gene Christman. Soon to be joined by **Land Birds of California** *by the same folks. The pair will be essential for anyone into knowing our bird cousins. Text superlative, illustrations adequate.*

—Rich Stallcup

Water Birds of California
Howard L. Cogswell
1977; 400 pp.
$4.95 postpaid
from:
University of California Press
2223 Fulton Street
Berkeley, CA 94720
or Whole Earth

Birds of the Yosemite Sierra

The only accurate summary of birds of the Sierra Nevada. Routine but loving accounts of all species with bar graphs for seasonal occurrence broken to east escarpment and west slope. Straightforward in the grinning-holiness spirit of John Muir. A few endearing sketches by Cameron Barrows. A must for glove box or back pack of the travelling naturalist.

—Rich Stallcup

Birds of the Yosemite Sierra
(California Syllabus)
David Gaines
1977; 153 pp.
$6.75 ppd.
(+ $ .36 if CA resident)
from:
California Syllabus
1494 MacArthur Blvd.
Oakland, CA 94602

The Audubon Society Field Guide to North American Birds: Western Region

Ahem! Lots needs saying about this one.

A best seller probably because of the use of the Society's name. It is not, however the official guide for National Audubon and just what the title infers is not at all clear.

Author Niklos Udvardy (who by the way is responsible for the Biogeographical Provinces Map that CQ sells) is a fine zoogeographer, one of the finest, but is not particularly a birder or field ornithologist and it is likely that the final copy was much written (or re-written) by the persons listed on p. 851 in acknowledgments.

Sketches by Doug Pratt and Paul Singer accompanying many descriptions are excellent. The 627 color plates compiled from the country's leading bird photographers are outstanding and by themselves are perhaps worth the price of the volume. Only about one percent are mis-identified which, for some obscure reason, is routine for photo essays of this sort.

Two big problems are readily apparent.

The section of Passerine (perching birds) plates, 220 of them, are arranged by color. The most obvious color on a bird groups it with others regardless of phylogenetic or taxonomic orders. By this method, such unlikely companions as Elegant Trogon, Red-faced Warbler and Gray-crowned Rosy Finch are together on one page. Another finds Clark's Nutcracker following Scissor-tailed Flycatcher following Pyrrhuloxia. Even if one was adept at using this discipline, it would be impossible to cross-reference to traditional systems. Furthermore, most juvenile and immature and many female plumages simply do not appear. It would be futile, for example, to try to identify a female Williamson's Sapsucker or a juvenile Dark-eyed Junco by using this guide.

The bulk of the book — species accounts — is arranged by the habitat in which the creature is usually seen. If the bird in question happened to be a nomad or a migrant (as most are, much of the time) one would have to page through the whole book for help. More proof that phylogenetic list schemes are the only workable schemes.

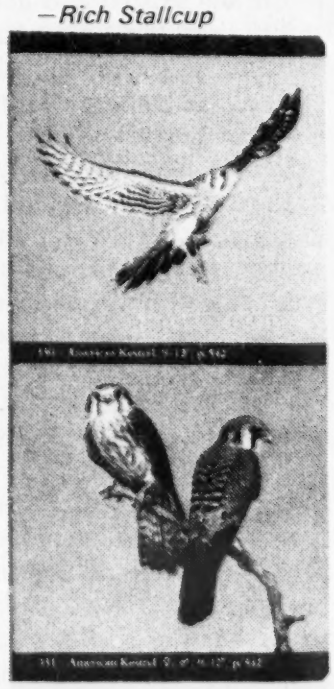
We haven't used the book much but the binding is already showing signs of wear . . . it is falling apart.

In short, if you want a coffee-table book with lots of great photographs and many other fine qualities get this one. If you want a usable field guide to western birds, get a Peterson or a Robbins (EPILOG, p. 478).

. . . Eastern Region

Exactly as its Western Region counterpart with the same pluses and minuses including some mis-identified photographs and the difficult formats of color-keyed illustrations and habitat-keyed species accounts. Nice for browsing, not a highly functional field guide.

—Rich Stallcup



The Audubon Society Field Guide to North American Birds: Western Region
Miklos D.F. Udvardy
1977; 855 pp.
$8.95 postpaid

The Audubon Society Field Guide to North American Birds: Eastern Region
John Bull and John Farrand, Jr.
1977; 855 pp. approx.
$8.95 postpaid

both from:
Alfred A. Knopf, Inc.
455 Hahn Rd.
Westminster, MD 21157
or Whole Earth

Communications

How to Produce a Small Newspaper

I can't imagine why anyone would dream of starting a small restaurant or a small bookstore when it's possible to start or take over or work for a small newspaper. As art and news media go, nothing else can give you as much freedom, creativity, responsibility, effectiveness, contact, and hometown adventure.

This fine book tells all and not a bit more. Picked up a few tips myself. —SB

How to Produce a Small Newspaper
Editors of the Harvest Post
1977; 158 pp.
$4.95 postpaid
from:
Harvard Common Press
The Common
Harvard, MA 01451
or Whole Earth

The example below shows a typical subscription record as it might appear in your files:

SUBSCRIPTION RECORD — Start: 3/17/71 — Billed:

Name: R. M. Nixon
Address: The White House, Washington, D.C. 20001

Notices	Paid	Expires
	B - 3/12/71	3/17/72
R - 2/23/72	B - 3/14/72	3/17/73
R - 2/26/73	B - 3/21/73	3/17/74
R - 2/22/74		
F - 7/26/74	CANCEL	8/9/74

Gift of: Mao Tse-tung
Send renewal to: Nixon

This particular subscription was a gift that was paid for on March 12, 1971. The subscription actually started on March 17. (Note that renewals were to be sent to the recipient of the gift, probably because of the giver's remoteness.) In the "Notices" column, "R" refers to a regular renewal notice, and "F" refers to a final notice. (You could use "S" to signify a second notice, if you use them.) There should be extra room on the record card for noting changes of address.

One final word: A system like this, once it is set up, can be easily used by a bookkeeper or other assistant; the work involved will take up only a few hours each month. But you needn't do things this way at all. There are now computer subscription services available that have the whole process automated. Subscribers automatically receive renewal notices and threatening letters, the publisher gets a weekly print-out analyzing the newspaper's entire financial state, and the computer generates address labels, lists of delinquent subscribers, and almost anything else you might want. Such services are very expensive. They may save time and effort (although we doubt it), but at what a cost! How ironic it is that the faceless, mindless influence of the computer age should make itself felt even in the world of the small independent newspaper — long thought to be a last bastion of individuality and human values. How much more personal it is for your subscribers to receive their renewal notices in your paper's own characteristic style, instead of in the form of the same old trashy computerized message that they already get from the telephone company, the electric company, and the bank. Many of your subscribers, when they sit down to write out a renewal check, will take the opportunity to scribble a short note or comment about the paper. How likely are they to do this if the note must be sent not to you but to some computer in the next county? It is these personal communications between a newspaper and its readers that breathe vitality into small-scale journalism. Do away with them at your peril.

Lithographer 1 & C, 3 & 2

If you want someone to teach you to be a first-class pressman or lithographer, join the Navy. If the military life isn't your cup of tea, you can teach yourself by using the same books the Navy does. It may seem odd to learn about half-tones by looking at pictures of destroyers and Donald O'Connor look-alikes, but for a general understanding of offset lithography or for specific instructions on camera or press operations, these are the most complete, the most clearly illustrated and well written manuals available. They cover everything from job planning and lay-out through printing and binding.

Take the case of Don Donahue, my partner in the comix biz. With nothing but the Navy books and a large supply of Korbel brandy to guide him he mastered the techniques of camera work and stripping, and achieved masterpieces of full-color art on his antique multi-1250. Don has since graduated to larger, more sophisticated presses, but he still keeps the Navy books handy. Their trouble-shooting charts on press and darkroom problems alone are worth the price.

—Susan Goodrick

Lithographer 1 & C
008-047-00077-4
Bureau of Naval Personnel
1970; 337 pp.
$4.00 postpaid

Lithographer 3 & 2
008-047-00190-8
Bureau of Naval Personnel
1975; 557 pp.
$6.00 postpaid

both from: Supt. of Documents, U.S. Govt. Printing Office, Washington, D.C. 20402

The image areas of a negative appear sharp and clear when it has been properly exposed and processed.

Warren Zevon
Excitable Boy

Only two albums so far from this piece of Los Angeles said to be a terminal case thereof. Everything on them fastens to the mind. I find Warren Zevon's words and tunes more compelling than Bob Dylan's — that's better than the best. Whether he can stay as alive and creative remains to be seen.

—SB
[Suggested by Margaret MacLean]

KANSAS CITY FRANK
MELROSE in "Pass the Jug"
©1978 BY R. CRUMB
KNOCK KNOCKITY KNOCK-KNOCK
KNOCK KNOCK!
WELL, HULLO, GEORGIE! COME ON IN.... WHAT'S COOKIN'?
HI FRANK... JUST A FRIENDLY SOCIAL CALL... HA HA....
WANNA DRINK? 'S TH' GOOD STUFF!
DON'T MIND IF I DO,... SAY, LISTEN, I HEARD YOU WALKED OUT ON THE AVON CLUB BAND... THAT WAS A PRETTY HIGH PAYIN' GIG, WASN'T IT? HA HA HA!
YEAH... YEAH, IT WAS... DARN GOOD... BUT I DIDN'T GET ALONG WITH MAX ESSNER... HE WAS ALWAYS THROWIN' THOSE SOCIETY ARRANGEMENTS AT US..
OH.... TOO HIGH-HAT FOR YA, EY? HA!
GULP!

SO HOW'S YER LITTLE FIVE-PIECE OUTFIT MAKIN' OUT, GEORGIE? YA GETTIN' GOOD JOBS?
OH, WE'RE DOIN' ALRIGHT... NOTHIN' TO WRITE HOME ABOUT... I DUNNO, THOSE GUYS — HA HA...

SAY, FRANK, YOU REMEMBER THAT CRAZY RED-HAIRED GAL SINGER GLADYS WOODS?...USETA HANG AROUND WITH MUSICIANS FROM MINNEAPOLIS... SANG WITH A BAND AT LUNA PARK?
OH SURE... WHATTA DISH!
NO GREAT TALENT BUT A NICE SHAPE ON 'ER...

YEAH YEAH, SHE'S NO RUTH ETTING BUT SHE'S BEEN GETTIN' AHEAD, SEE.... GOT A NAME ON SOME RADIO STATION... ANY-WAY, LOOK, SHE WANTS TO GET A COMBINATION TOGETHER TA BACK HER UP AT TH' ARROWHEAD INN....
OH YEAH? NICE PLACE... I PLAYED THERE ONE SUMMER...

YEAH, I'M THINKIN' OF TAKIN' SOME OF TH' BOYS AN' GOIN' IN WITH HER, AND I, UH, ...WAS WONDERIN' IF YOU MIGHT BE INTERESTED....
YEAH, EXCEPT THAT TH' BROAD CAN'T SING... I DUNNO...
OH, HEY!

THERE'S A BIG COLORED ORCHESTRA THAT COMES OVER WJZY ABOUT THIS TIME EVERY EVENING... IT'S A BROADCAST FROM TH' VENDOME THEATRE.... THOSE BOYS PLAY HOTTER THAN HOT AND THEN SOME!!
OH SURE... I'VE HEARD 'EM... TOP-NOTCH ORCHESTRA, I'LL TELL TH' WORLD!
LET'S SEE IF I KIN BRING 'EM IN...
FWEEOO-OO-WE

I THINK I GOT 'EM!
THE LEADER'S NAME IS ERSKINE TATE... THEY BEEN AROUND A LONG TIME!
YEAH... STOMP OFF!

YEAH YEAH YEAH
THOSE CRAZY CANNIBALS! HA HA HA!

SAY FRANK, I GOT MY CAR HERE...WHY DON'T WE RUN IT DOWN TO TH' VENDOME AN' CATCH THIS BAND IN PERSON!
NAW, I GOTTA MEET SIG MEYERS AT THE THREE DEUCES TONIGHT... YOU WANNA COME ALONG, GEORGIE?

MEBBE...WHAT'S COOKIN' DOWN THERE TONIGHT?
WELL, SIG HAS LEFT TH' AVON CLUB ORCHESTRA WITH ME AN' WE'RE LOOKIN' TO SEE IF WE CAN GET A HOT BAND GOIN' AGAIN.... SOMETHIN' LIKE TH' MIDWAY GARDENS GANG... YOU REMEMBER...WE PLAYED GOOD JAZZ IN THAT BAND!
YEAH, SOUNDS GOOD...SURE, I'LL COME.... BUT YOU'RE DREAMIN', AS USUAL! HA HA!

MAN! I WISH I PLAYED IN A BAND LIKE THAT!
NAH... YOU'RE NUTS...THOSE COONS DON'T MAKE ANY KIND OF DOUGH...

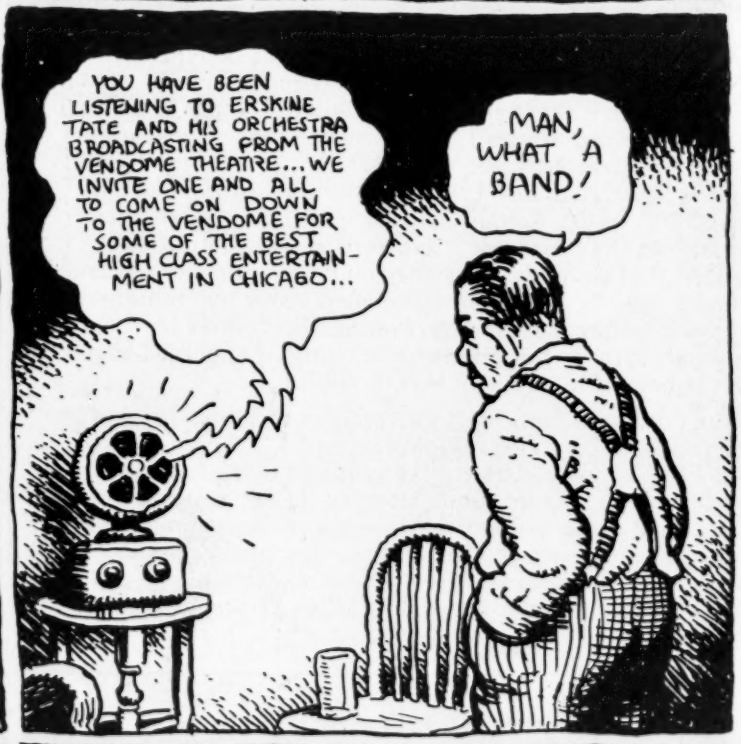
NEW YORK IS THE PLACE TO MAKE THE BIG MONEY... SOME OF THE BIG HOTEL BANDS THERE ARE HIRIN' JAZZ MUSICIANS ALL OVER TH' PLACE! HA....
YEAH, YEAH... IF ONLY THEY'D PLAY SOMETHIN' BESIDES SHMALTZ!
TH' GODDAMN MUSIC BIZNIZ!

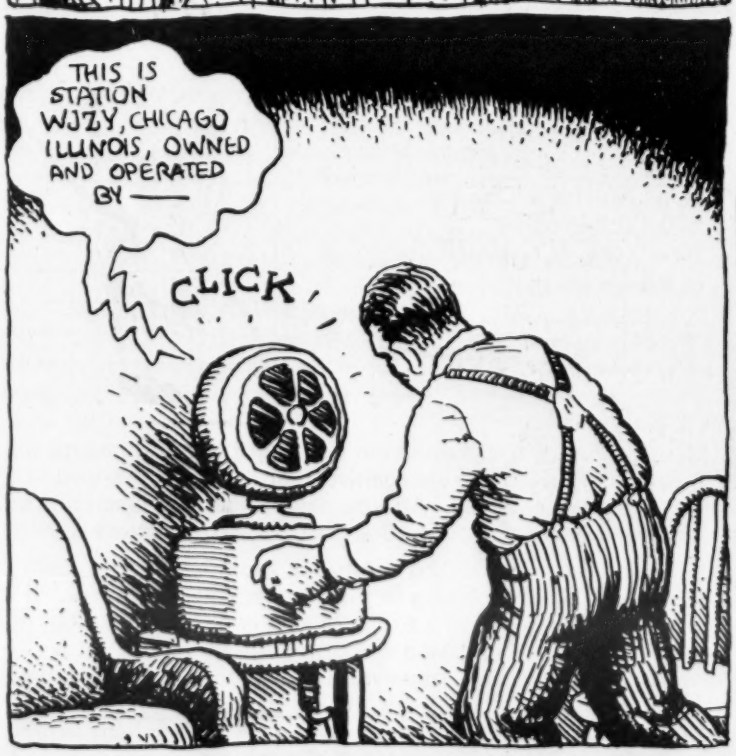
LOOK AT BEN POLLACK! NOW HE'S LEADIN' ONE OF THE MOST SUCCESSFUL BANDS IN NEW YORK, THERE AT THE PARK CENTRAL HOTEL... AND A FEW YEARS AGO HE WAS SCUFFLIN' IN CHICAGO RIGHT ALONG SIDE O' YOU AN' ME!!
HEY, GEORGIE... I'M COOKIN' UP A BATCH OF SPAGHETTI TONIGHT... YA WANNA PARTAKE?

COUNT ME OUT, FRANK... I'M TAKIN' MY GIRL OUT TO DINNER TONIGHT... IN FACT, I GOTTA GET MOVIN'... SHE'S PROBBLY ALL DOLLED UP AN' PACIN' THE FLOOR ALREADY!
HEY, WELL, MAYBE YOU'LL COME AN' SIT IN WITH US AT THE THREE DEUCES LATER, HUH, GEORGIE? WE'RE GONNA BLAST THE LID OFF THAT JOINT TONIGHT!
BUT THANKS FOR THE DRINK!
JINGLE JINGLE
JINGLE JINGLE

SWELL! LISTEN, I MAY BE A LITTLE LATE IF I CAN WANGLE A RETURN ON MY INVESTMENT TANIGHT! YA GET ME?? HA HA HA!
...INVESTMENT?.... OH YEAH, RIGHT! HA HA! OKAY! GOOD LUCK, PAL!

SLAM


YOU HAVE BEEN LISTENING TO ERSKINE TATE AND HIS ORCHESTRA BROADCASTING FROM THE VENDOME THEATRE... WE INVITE ONE AND ALL TO COME ON DOWN TO THE VENDOME FOR SOME OF THE BEST HIGH CLASS ENTERTAINMENT IN CHICAGO...
MAN, WHAT A BAND!


THIS IS STATION WJZY, CHICAGO ILLINOIS, OWNED AND OPERATED BY——
CLICK...

THE END

The true story of "Ladle Rat Rotten Hut" (Little Red Riding Hood)

It was H.L. Chace, not "anonymous," who wrote "Ladle Rat Rotten Hut," which we reprinted in the Spring '78 CQ. He was a professor of French at Miami University in Oxford, Ohio, retired in 1965 and now is living in Cincinnati. He's in his eighties. I talked to him by phone about the story of the story.

"I wrote it about 1940. It was going to be part of a little article I was writing. It was in the days of rationing during the war and I thought about what would happen if we had to ration language. If our vocabulary were cut in half, we'd have to get along with other words. Consequently, I thought I'd see how you'd get along with the other half. I've never written that article, but I've always thought of doing it.

"I taught French, and I used the story in my class to show the importance of intonation in learning a foreign language. You see, if you take these English words and put them in columns like a spelling book and just read them, they have no meaning. However, if you read them with the proper intonation, the meaning appears for certain people. For other people the meaning never does appear.

"I never submitted it to anybody, but it got spread some way or other. It's one of those things that got completely out of control. I showed it to a few friends and to a book salesman who came to see me. He liked the thing because it had to do with words. I think I may have given him a copy, and he must have given it to someone else. It first appeared in print in the Merriam Company's magazine **Word Study**. I think it got in **Stars and Stripes** [U.S. Army newspaper] because I heard from people in Baghdad, Sweden, all over the world. **Sports Illustrated** found it in another publication and gave me $1000 for it. Arthur Godfrey found it in **Sports Illustrated**, and he broadcast it and very generously told any readers that wanted a copy they could have one by sending me postage. To my surprise, I mailed about five thousand of them. After that episode, Prentice Hall asked me to write a series of stories for a book, which I did. [**Anguish Languish** was published by Prentice Hall in 1955.]

"The book sold fairly well for that sort of thing. It went through four printings I think, maybe 14,000 copies total. But I think they had a lot of disgruntled readers, people who bought it and couldn't understand it. It was quite controversial. I said that every word in it was a common English word, not a dialect. I was challenged a number of times as to whether these words were really English. One of my colleagues at the university said, 'Come on, Chace, you know there's no such word as languish.'

"It's used now a good deal in textbooks to demonstrate the phonetic structures of English. The book has been used by some psychologist to determine the ability of people to understand sound, to study the limit of distortion that can be comprehended. That varies from person to person.

"People who like it best are language people, teachers, lawyers, and doctors. That's almost all the people who are interested in it. And children, strange to say. I've had a lot of letters from them."

I asked him if it bothered him that it is often printed without his name. He said, "Well, it doesn't bother me, but it's just that if I had a cent for every Xerox copy, I'd be much better off because I know it's been copied by the thousands."

The book, **Anguish Languish**, *is out of print and very hard to find. Chace himself only has one copy. Dover or somebody should reprint it.*

—Anne Herbert

Anguish Languish meets the Pledge of Allegiance

Thanks for "Ladle Rat Rotten Hut" in your Spring issue. I remember that my family had a collection of such tales as retold in "anguish languish"; we would read these out loud on long car trips through Middle America in our 1950 Nash (the inverted bathtub — now known as hatch back). My sister and I were elated, since puns are endemic to the speech of children.

Many public texts become "anguished" through the process of aural learning. How many versions there must be of "The Star-Spangled Banner," for example. My father thought that "da-bombs bursting in air" were a special kind of weapon. To this day I don't know whether it was "the peril last night" or "the perilous night." Recently my daughter brought home her version of the "Pledge of Allegiance," with the line "coordination, under God." It didn't take long to complete a 100% anguished version, which is very useful in crowd situations, since no one can tell the difference. . . .

Hype ledger regents
Toothy flog
Other Benighted Steaks
Unhysterical. An
Toothier hubbub lick
Fur Wichita Sands,
Wan Asian,
Udder Gob,
Endive Isabel,
Worth liver tea
Adjust if hurrah!

Albert Howard Carter, III
St. Petersburg, Florida

Latter

MARSH 21

DEAR VAL,
HOUR CWE? GNAT WALKING TOWARD DIET RUST. ARM RIOTING CHEW WATERS PACIFIC PORPOISE. UN-CLOTHED AURICLE VISTAS AIM ASWAN USE ENEMY LASSY EAR. WALL NUT QUIET INSANE. AID LAKE TOOTHY OARS A GUN. EYE LASTED. CUD USE ENEMY ON UDDER?
WARY JEW FAINTED? COD USE ENEMY THE ROCKS CHOPPY OBADIAH RAGING ALL? TEN QUEUE BERRY MATCH.
Neil

MARCH 21

DEAR VAL,
HOW ARE YOU? ~~GNAT WELL~~ NOT WORKING TOO HARD, I TRUST. I'M WRITING TO YOU WITH A SPECIFIC PURPOSE. ENCLOSED ARTICLE IS THE SAME AS ONE YOU SENT ME LAST YEAR. WELL, NOT QUITE THE SAME. I'D LIKE TO SEE YOURS AGAIN. I LOST IT. COULD YOU SEND ME ANOTHER?
WHERE'D YOU FIND IT? COULD YOU SEND ME XEROX COPY OF THE ORIGINAL? THANK YOU VERY MUCH.
Neil

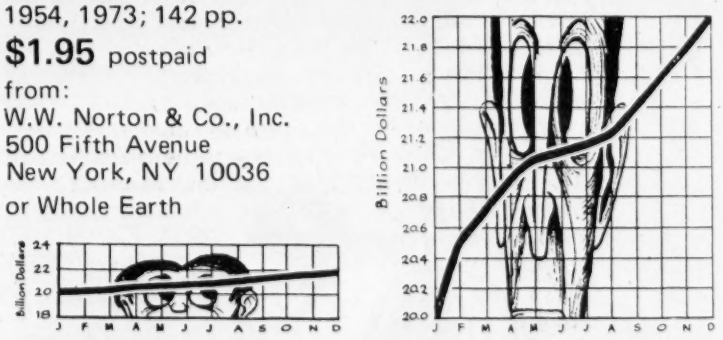
Neil Rubenking
San Francisco, California

How to Lie With Statistics

In these days of polls and "proof" furnished by testing by "independent laboratories," it might well to bear in mind the lessons given by this simple book. It's been around a long time, but it's still deadly.

—J. Baldwin
[Suggested by Jonathan Katz]

How to Lie With Statistics
Darrel Huff
1954, 1973; 142 pp.
$1.95 postpaid
from:
W.W. Norton & Co., Inc.
500 Fifth Avenue
New York, NY 10036
or Whole Earth



Simply change the proportion between the ordinate and the abscissa. There's no rule against it, and it does give your graph a prettier shape. All you have to do is let each mark up the side stand for only one-tenth as many dollars as before.

That *is* impressive, isn't it? Anyone looking at it can just feel prosperity throbbing in the arteries of the country. It is a subtler equivalent of editing "National income rose ten per cent" into ". . . climbed a whopping ten per cent." It is vastly more effective, however, because it contains no adjectives or adverbs to spoil the illusion of objectivity. There's nothing anyone can pin on you.

Learning

Revisioning Psychology

Conscious behavior nowadays apparently intends simplicity but nonetheless wakes in the night bafflingly tangled. While it remains difficult to legitimize the awkward passion for complexity, for preserving mysterious enigmas, James Hillman's proposals in this book confirm the best suspicions without offering "A Way" or any such answers. He suggests a hard path of intellectual work coupled with acute attention to our shadow lives. No joyous prize awaits anywhere. As I struggle with him I continue to look for relationships among other stuff, an odd effort to dilute his words, but fail. Perhaps embodied in this work is that task I have proudly neglected. That's a good thing to learn.

A central puzzle about which excursions revolve is that what we consider the gods and goddesses of antiquity — those curious, lovely, and poetic myths — are truly the forces driving our lives — living our lives, trading off positions of power as need be between them. Learning to accept the rages of the soul is the work; to sacrifice to, not choose from, the possibilities. A complicated justification for the needs of diversity but an appealing one and one that goes far beyond the vain methodicalness of New Age men and women. My appetite for this book never ceases because it doesn't talk at me yet somehow reveals my rumors, dreams and visages to be more profound than I gave credit. An affirmation of the glorious spontaneity in spirit.

—Terry Lawhead

Re-Visioning Psychology
James Hillman
1975; 266 pp.
$4.50 postpaid

from:
Harper & Row, Publishers, Inc.
10 East 53rd Street
New York, NY 10022
or Whole Earth

This book is about soul-making. It is an attempt at a psychology of soul, an essay in re-visioning psychology from the point of view of soul. This book is therefore old-fashioned and radically novel because it harks back to the classical notions of soul and yet advances ideas that current psychology has not even begun to consider.

•

Finally, since ideas present archetypal visions, I do not ever truly have ideas; they have, hold, contain, govern me. Our wrestling with ideas is a sacred struggle, as with an angel; our attempts to formulate, a ritual activity to propitiate the angel. The emotions that ideas arouse are appropriate, and authentic, too, is our sense of being a victim of ideas, humiliated before their grand vision, our lifetime devotion to them, and the battles we must fight on their behalf.

Growing Without Schooling

John Holt's newsletter about not sending children to school. Letters from people who are doing it, advice about what to do and not do with kids at home, the latest legal news, and a directory of unschoolers so they can get in touch with each other. Looks essential if you're not public schooling your kids.

—Anne Herbert

Growing Without Schooling
John Holt, Ed.
$10.00 /year - 6 issues ($.50 - sample copy)

from:
Growing Without Schooling
Holt Associates, Inc.
308 Boylston St.
Boston, MA 02116

If I had children, and wanted to teach them at home, I think I would ask someone from out of town, perhaps even out of state, to write the local School Board saying, in effect, "I am now teaching my children at home, am thinking of moving to your area, and am looking for a school district in which I can go on doing this. What requirements and conditions would I have to meet in order to be able to do this in your community?"

To put the question this way puts the School Board in a bit of a spot. If they say, "It doesn't make any difference what you do, you can't teach your children at home under any conditions," they may be violating state law. In any case, such a statement will not look very good if the matter ever goes to court. If they say, "You must meet such and such conditions," and you later meet them, it will be harder for them to say no. If they begin asking prying or hostile questions, or do not answer at all — well, there is your answer. Whatever you decide to do next, you will not have revealed yourself to them.

•

"In **Blackberry Winter**, Margaret Mead (who did not attend school regularly until she was eleven) said that children used to be brought up by means of stories. I thought I'd like to try that with my children but didn't know how to start until Sean began to ask me questions last summer about the origins of man and the universe. He would ask me, "How did God make Adam and Eve?" or "How did God make the earth?" Knowing nothing, I knew everything, and I began to enjoy answering his questions, which I did with stories."

Three Steps, One Bow

A couple of years ago, when I heard about two American monks from San Francisco's Gold Mountain Monastery who bowed their way along Highway 1 from the Golden Gate Bridge to Seattle, I thought they must be crazy. Then this fall, on a visit to the City of Ten Thousand Buddhas (recycled from the Mendocino State Mental Hospital), I was shown around by a monk, Bhikshu Hung Ju, a former submariner and delightful guide sane enough to laugh about his life as a T'ang dynasty Chan monk. (Up way before dawn, one meal a day, sleeping in meditation posture, reading sutras in Chinese.) Only later did I discover he was the same monk who'd bowed his way up the coast. His journal of that 1100 mile journey (with Bhikshu Hung Yo) is spare, funny, and moves, head to ground, way past piety. (All the details are there.)

—Rick Fields

Three Steps, One Bow
Bhikshu Hung Ju and
Bhikshu Hung Yo
1977; 156 pp.
$5.95 postpaid

from:
Buddhist Text Translation Society
1731 Fifteenth Street
San Francisco, CA 94103

I didn't tell anyone about my decision to bow. I figured since it didn't involve anyone else, why talk about it? I didn't even inform the Abbot. One night in early October, after everyone was asleep, I packed up a bag with some books, food, and clothing, and went bowing out the door onto the sidewalk of Fifteenth Street. I would take three long strides, and then stretch down on hands and knees, bringing my forehead down to within an inch of the pavement. The cement was very cold. The streets were empty; it was dark and I felt quite strange. The bag, which weighed about thirty pounds, was a problem. On the third step, I would toss it ahead and then bow up to it. But this act of bowing was extremely invigorating, it was tremendous exercise! I bowed steadily in order to get in as much mileage and experience as possible before daybreak.

•

A modern-day pilgrimage in America takes a different form than the pilgrimages made by monks in Asia. First of all, a matrix of monasteries and temples where a pilgrim would be welcome has not yet developed in the West. Therefore we take advantage of technological devices — camping gear, which allows us to lodge practically anywhere. Second, the roads we take are walkable, although sometimes not quite wide enough for us alongside the automobile traffic. Compared to the pilgrimages made in Asia over narrow, rutted paths, perhaps we have an advantage. Third, since people here are unfamiliar with our tradition, we spend a lot of time explaining it to those who ask about it.

Business

...Not till you send us your new address & old mailing label. Use our order form & prepaid envelope if you like. If you'll do it 4 weeks in advance of moving, we'll guarantee you get your CQ.

And if you're writing in with a problem, it's really important to include the label too & as much info as possible. And please, PRINT OR TYPE - it makes our life easier.

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CoEvolution Quarterly — Summer '78 Financial Report

EXPENSES	Feb.,Mar.,Apr. (Prediction)	Feb.,Mar.,Apr. (Actual)	May,Jun.,Jul. (Prediction)
Salaries and fees			
Office	$ 24,000	$ 23,143.41	$ 20,000
Production	9,500	10,572.26	9,000
Editors	9,000	9,176.50	9,500
Contributors	5,000	6,837.02	7,000
Office rental, materials, etc.	13,500	13,413.83	13,500
Phone	1,700	1,687.72	1,800
Promotion	33,500	20,916.96	1,400
Printing	37,500 (70,000 copies)	40,134.18 (70,000 copies)	25,500 (55,000 copies)
Subscription process and mail	11,000	19,640.43	14,000
Shipping	1,100	1,544.54	1,700
Business reply	1,500	1,000.00	1,000
Refunds	450	200.00	200
Total	$147,750	$148,266.85	$104,600
INCOME			
Subscriptions, gifts and renewals	$125,000	$106,474.10	$ 53,000
Retaining and Sustaining	3,000	3,935.00	3,000
Back issues	5,000	5,752.37	4,000
Distribution	18,000	20,398.94	19,000
Total	$151,000	$136,560.41	$ 79,000
NET PROFIT OR (LOSS)	$ 3,250	($ 11,706.44)	($ 25,600)

POINT Financial Report

CQ (detail above)	PAST QUARTER* Feb., Mar., Apr. 1978
INCOME	$136,560.41
EXPENSE	148,266.85
CQ Books	
INCOME	
Penguin	9,583.33
Direct Mail-Order	2,153.12
EXPENSE	
Production & Mail-Order Supplies	10,559.14
Catalog & Epilog	
INCOME	
Penguin	13,524.41
Direct Mail-Order	1,826.60
EXPENSE	
Production & Mail-Order Supplies	500.51
Maps, Posters, Postcards, II Cybernetic Frontiers	
INCOME	1,766.58
EXPENSE	2,761.65
Miscellaneous	
INCOME	
Point, Miscellaneous	50.00
EXPENSE	
Point, Miscellaneous	3,965.00
TOTALS	
INCOME	$165,464.45
EXPENSE	$166,053.15

*Next issue will have the year's totals

POINT Balance Statement
30 April 1978

ASSETS	
Cash in bank	$ 94,527.41
Investments	27,344.75
Accounts receivable	
Distribution	40,058.14
INVENTORY	
Back issues, CQ	84,107.35
Maps, posters, other products	3,403.25
Mail-order LWEC & WEE	3,012.00
Mail-order CQ Books	4,431.25
Penguin inventory	
CATALOG ($1.73)	35,721.04
EPILOG ($1.01)	64,152.17
LIABILITIES	
Accounts payable	—
Deferred SB salary	29,750.00
Subscription liability	310,065.00

'Or Whole Earth'

That phrase under the access of an item in The CQ *means that you can mail order it from:*

Whole Earth Truck Store
558 Santa Cruz Avenue
Menlo Park, CA 94025

Note: Please add $.50 to any order to cover shipping and handling. Inquire for UPS, Air Mail, or foreign postage charges.

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The CoEvolution Quarterly
Box 428
Sausalito, CA 94965

Editor to editor

The writer is editor of the **Mariner's Catalog** *much reviewed in these pages (Vol. 5 just last issue).*

—SB

. . . Like you (I detect), I am chafing on all the information and models for organizing it that life has brought our way, and also finding our established organs for thrashing it (them) inadequate for the job. The CoEvQuart, of course, is superb constantly and important often, but the sense I get, a kind of undertone to the whole giant orchestration of serious enterprises in the country is that the principals at the various helms are feeling a little betrayed by their own intelligences.

Once or twice one can ignore how stupid or at least vastly incorrect one has been at those times one felt right on top of The Story and to marvel at those times, once or twice, when blowing it worked out just fine. But it is not once or twice. It's a lot. There are some historians around making their reputation developing a thesis of historical irony; how good is bad and bad is good or some other bloody doublethink, but that isn't what I'm talking about. I am talking about the feeling I have, as surely you must along with another fifty or so either of us could name, that the most altruistic and thorough intellegence is willfull and that, unless you make this insight reciprical to cases at hand, you are blowing it! The incredible foolishness of much of the invironmental movement, the various human potential movements and the religiocrafts phenomena are examples. They have the disadvantages of drugs with none of the advantages.

It (the feeling) comes, I suppose, out of an effort to conserve personal energy. Those who push hard early on at what is felt to be right and good get the personal piss scared out of them a couple of times and, at the threshold of middle age, kicking and screaming, they are not wont to abandon what works just a little bit. Each time one contemplates dropping the current ball for one or another out of a list of inadequasies, the prospect becomes more onerous until, finally, one knows/fears that beyond the next new beginning lies either breakdown (again) or some ambulatory psychosis, like fundimental religion or compulsive collecting of milk glass.

This could be mountains out of mole hills, but I don't think so. It really is a fact that writing about recreational boating is kid stuff; that tens of thousands of ex-professional people moving to the country are not going to feed anyone, including themselves in most cases; that, in spite of some valid theoretical nitpickings, Kahn's supercilious New Class does represent a kind of symbolic feudalism in the culture and that all their cultural trappings, including publications, aid and abet them.

Except to keep writing, walking and farting around in the shop, I haven't the faintest notion where to from here. You, I know, are tempted by politics. Very heady, like those towers at the acid tests, all Hobbits & Striders.

In any case, Why don't you get on the phone and ask your friends to/for pieces on the settling down process, the growing a little older, the hiring of help, the getting your own bullshit back from the children, the reflections on serial polyginy, the newfound advantages of old institutions, the shared notes on taking dope for a decade and more; the realizing how many around have never received a minute of love in their lives and who shall never give or understand it; the seeing of numbers who miss a just war to fight; the desparate work of dealing with beautiful people; the problem of where valid loyalty ends: You know, and so on and on.

Ah well, it's a nice New England autumnal day here and I've enough of this dreariness. How about a nice piece in the next Mariner's Catalog on your Whitehall?

Warmest Regards to You and
Those There,

George Putz
Vinalhaven, Maine

Next issue —
Journal for the Protection of All Beings

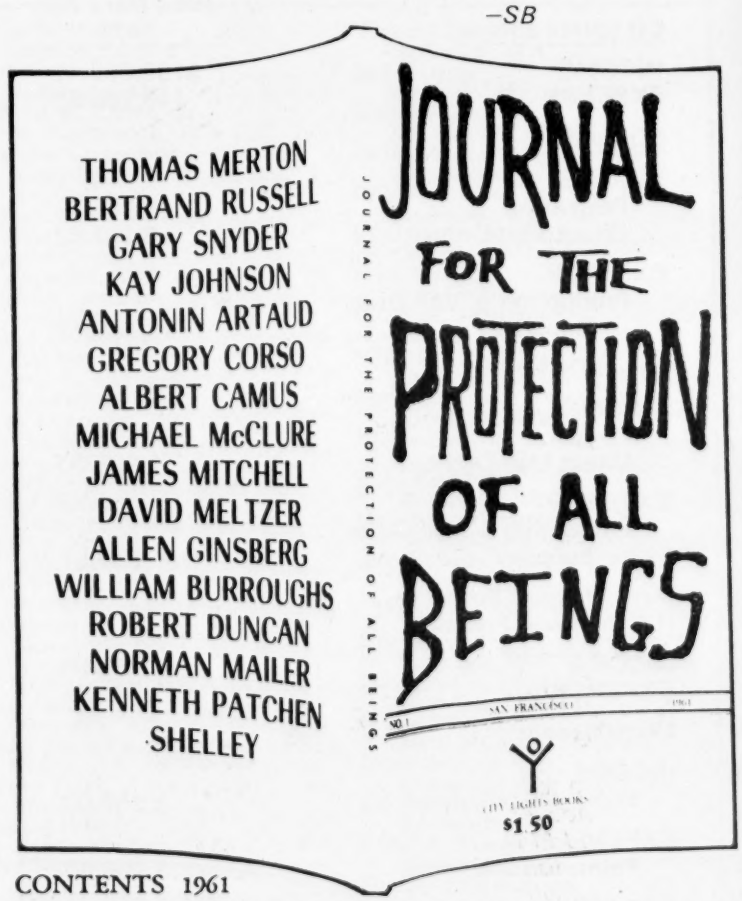
Poets Lawrence Ferlinghetti, Michael McClure, Gary Snyder, and David Meltzer are editing the Fall '78 issue of CoEvolution *as a new volume of the "Journal for the Protection of All Beings," which they started in 1961. That publication was an early, and fertile, seed of what became the ecology movement, the New Left, and other '60s flowerings.*

For this issue they have sent out letters to everyone of interest to them, from Orson Welles to Paul Martin the pleistocene extinctions man. The letters say in part:

> Michael would like work emerging out of recent bio-alchemical perceptions of the Universe.
>
> Lawrence wants works to further provoke the dismantling of Industrial Civilization.
>
> Gary would like works on Buddhist systems and texts providing clear useful inroads into Poetics.
>
> David is interested in works illustrating the continuity and/or finale of spiritual traditions and practices.
>
> All are in agreement as to the overall crisis we are facing: the irreparably destructive reduction of diversity in the world. Diversity is the health of evolution. And this is not to be taken as a frivolous statement. It is not only an asthetic, spiritual, or philosophic notion. It is an ultimate problem touching all areas of our future. It is of the utmost significance in our concern with how we live on the planet.
>
> As before, each of the editors is sending out these invitational letters to artists, poets, writers, philosophers, scientists, musicians, historians, etc., who they feel have valuable and important statements to make. As before, we ask each contributor to offer their best. Definitive statements, profound summaries. The essence of in-sight: the vision.

The issue will be co-published with City Lights Books.

—SB



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CQ flacks for Brown

Dear Stewart Brand:

It is no secret that Governor Brown has presidential aspirations and that you are closely aligned with this man. Since nearly every issue of CQ contains an article about, reference to, or picture of Brown, I am beginning to feel used as an unwilling audience at a political pep rally, which is not why I or most people read your publication. Your bias is flagrant. In the interest of untainted information, how about a long hard look at your ability to edit objectively.

Sincerely,

Ken Elam
Newport, Oregon

Dear CoEvolution —

. . . Please avoid this harping on the wonders of Governor Brown. As seen from across the country, his actions are not particularly impressive, no matter how wonderful he appears on your pages. Having watched him since the '76 election, I find myself for the first time agreeing with a Republican friend of mine. I don't trust him. He's a politician and he appears to be using you. . . .

Affectionately,

Charlie, for the Clan
U.S. NAVAVNWPNSFAC (Det)
Machrihanish, Scotland

It's interesting.

When I was growing up in the Midwest in the '50s, I learned from the press about Albert Einstein and J. Robert Oppenheimer. Einstein was a fool, a clown, who thought he was so smart. He had long hair, floppy sweaters, and rode a bicycle. Oppenheimer was a weasel, a slimy Communist. Too smart for his own good, he finally got what was coming to him. We ate it up.

If you now say, "But Brown is no Einstein!", you have a wonderful opportunity to inspect the emotion on that reflex. He's a politician. He's bright. He's a little different. So what?

I print what looks interesting. Fragments of the flow of unusual ideas through an office and person where policy is made I figure is interesting. In effect Brown functions as a contributing editor for CQ, at no pay. Who's using whom? By the way, editorial objectivity does not exist, and you would not like it if it did.

These letters and many others we get often have another message: "You Californians are so smug and groovy it's disgusting." I agree! When I want to flow deep and slow I go to Eastern Canada as an antidote to California. But we're an idea magazine, and ideas are loose on the West Coast, so here we are. No one complains that the New Yorker *is overly regional in outlook.*

"But CoEvolution *is no* New Yorker*!"*

That's right.

—SB

The (Your Name Here) Whole Earth Index 1971-1978

Would you like to have an index named after you? We have a wonderful indexer wonderfully indexing all the CQ's and CATALOG and EPILOG and CQ Books, but we can't afford to pay her to finish the job. We need $4000. If you give it, we'll cover you with praise and name the finished index after you or the friend, relative, hero of your choice. And we'll be able to make the index available to the public at reasonable cost.

(Please do not offer to do the index yourself for less or for free. We want to stick with known wonderfulness, and I don't want to have to turn down kind offers.)

—Anne Herbert

R. Crumb Benefit July 3 in Berkeley

You never saw Mr. Natural selling waterbeds on TV, did you? We hope you never will. To that end, CQ *and Leopold's Records are producing a benefit concert for Robert Crumb on July 3 at the Berkeley Community Theater. We'll have the Jerry Garcia Band, Commander Cody, Paul Krassner and a few surprises. Tickets are available through Bass.*

Why hold a benefit for the man who drew "Keep on Truckin? That drawing was ripped off so often Crumb hired a lawyer to "protect him." Then the trouble really began. When the dust had cleared, Crumb's ex-wife and the lawyer had all the money and Crumb had the I.R.S. bill. After selling his house, his original art work, anthology rights to his comix, and foreign publication rights, he still owes the Feds over $15,000 with little hope of raising it himself.

Concerned fans have been sending small gifts and letters of support and this is a big help. We hope that the benefit will raise enough money to retire the debt and allow Crumb to stop worrying about the government and get back to his cartoons.

—Susan Goodrick

R. Crumb by R. Crumb

Gossip

R. Crumb's Kansas City Frank (p. 136) was a real person who flourished in the late Twenties. This magazine does not publish fiction.

The CQ *office is operating at a fraction of its usual efficiency since Andrea Sharp has left for a month in Europe — England, Holland, Italy, and France (where she will meet her husband's mysterious half-brother who was conceived during World War II with the lady illustrator of the* Babar *books).*

Financial voyeurs will note that our income this quarter is way the hell down from what we expected. Part of what happened was, we did a big expensive relatively slick direct mail campaign which bombed. That left us with a lot less income and a lot more copies of CQ *No. 17 than we figured on. Our loss is your opportunity, as follows.*

The best promoters of CQ *are its readers. The best description of* CQ *is the thing itself. Therefore, (Dick Fugett schemed) let's offer free* CQ*s to our readers to give to their non-*CQ*-reading-yet friends. All you have to do is fill in the gift forms on the order blank with your friends' names, and write "free copy" on each form. If you add your name we'll mention your generosity.*

The Whole Earth Jamboree on August 26 - 27 (see p. 144) is rapidly gaining substance. We're having a little trouble locating old Whole Earth employees and would appreciate post cards so we can send invitations to come revel in nostalgia, each other's kids, and the mighty sweep of the occasion. Of the invited speakers for the event even those refusing have style — from the graceful (Ursula Le Guin: "Woe. Alas. Phooey. Sob.") to the cruel (Lewis Mumford: "Thank you! But to escape the Whole Earth Jamboree I'd buy a one-way ticket on a spaceship to Saturn.")

Carol Kramer finally got over her pregnancy, exchanging it for a well-mannered small girl named Jessica.

—SB

Gerbode Valley, Marin County, California

Whole Earth Jamboree

August 26–27, 1978

YOU'RE INVITED to a party to help us at Whole Earth get used to the idea of having been in business for 10 years. A modest little get-together put on by us, the U.S. National Park Service, and the California National Guard.

Truth.

The site is Gerbode Valley, ten minutes from the Golden Gate Bridge in Marin County. It's part of the Golden Gate National Recreation Area, which explains that part of the co-sponsorship. Gerbode is a lovely empty mile-long grassy valley, capable of holding 20,000 people on a weekend without a dent on the landscape but perhaps a durable impression or two on the party-goers.

There will be New Games. This after all is the very place we put on the first New Games Tournament in 1973. The still-blooming New Games Foundation will be there with Earth Ball, Slaughter, Le Mans Tug O' War, Prui, Boffing, Dho Dho Dho, New Frisbee, Stand Off, and so forth.

There will be booths. Whole Earth Truck Store, Zomeworks, Tassajara Bakery, etc. and etc. If you want to have a booth at the Jamboree, get in touch with Patty Phelan at address below. (The number and kinds of booths will be limited.)

There will be music — a sound stage featuring musicians prominent and obscure. Certainly R. Crumb on banjo, Dan O'Neill on banjo, J. Baldwin on musical saw, and luminous others yet to be named.

There will be a talk stage. We've just sent the invitations out for that. Some of the voices who've already let us know they'll be on hand are Bruce Ames, Marlon Brando, Ernest Callenbach, Wilson Clark, Robert Curry, Raymond Dasmann, W.C. Ellerbroek, James Fadiman, Mimi Farina, Tom Ferguson, Lawrence Ferlinghetti, Hazel and Carter Henderson, Huey Johnson, Lloyd Kahn, Alan Kay, Jay Kinney, Paul Krassner, Theodora Kroeber, Lewis MacAdams, Jerry Mander, Dennis and Donella Meadows, Stephanie Mills, Mark Mitcham, My, Scoop Nisker, Michael Phillips, Gilbert Shelton, Malcolm Wells, and more answering each day.

That's the raw matrix. Elaborations will be added as the summer progresses. Much of the field facilities are being provided by the California National Guard, who can use the training. I imagine some aspects of this event may resemble an episode of "M.A.S.H." Former Lieutenant Gurney Norman is bound to revert and lead revelers in close order drill.

$3 per person per day gets you in — that's good for late morning through early evening on Saturday or Sunday (or both, $6). Under 5 years old free. POINT gallantly lost $30,000 at the first New Games Tournament, but we dare not do that again or the celebration will be a self-fulfilling wake for the CQ. Breaking even is the plan. (We could use volunteers to do preparation, staffing, and clean-up. If you'd like to help, get in touch with Rosanne Kramer at address below.)

By then, late August, tickets should be available (up to a limit to be set by the Park Service) from all BASS ticket outlets in the Bay Area. Meanwhile we'll accept mail orders and send you a map to the site with your tickets. Write to: Whole Earth Jamboree, Box 428, Sausalito, CA 94965. Checks should be made payable to "POINT." Tickets may or may not be available at the gate.

The last time we had a party (The Demise Party in 1971) we gave away $20,000 in cash to the crowd. That won't happen this time. Other things will.

—SB

Order Form

We've enclosed an envelope, overleaf

Self

NOTE: *Foreign subscriptions (including Canada): $14/one year, $23/two years (U.S. funds)*

Please mark in boxes clearly.

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- [4] CQ back issues — $3 each

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  (See overleaf for issues available.)
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- [6] Whole Earth EPILOG — $4
- [7] BIOGEOGRAPHICAL MAP — $3
- [8] SPACE COLONIES Book — $4
- [9] SOFT TECHNOLOGY Book — $4
- [10] WATERSHEDS Book — $5 (for delivery August 1978)
- [11] TWO CYBERNETIC FRONTIERS Book — $2
- [12] 1,000,000 GALAXIES Poster — $4

All subscriptions start with current issue unless you indicate otherwise, and are sent via surface mail. For special service (mailed in envelope, first class or airmail) check box below:

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☐ **RETAINING:** *$30/year. $18 tax-deductible. You get your CQ in an envelope, delivered first class, and we gratefully publish your name and town (unless you say not to). It's tax-deductible because we're a non-profit corporation.*

☐ **SUSTAINING:** *$100/year. $88 tax-deductible. You get your CQ in an envelope, airmail, and we gratefully bless your name and town in the magazine (unless you say no).*

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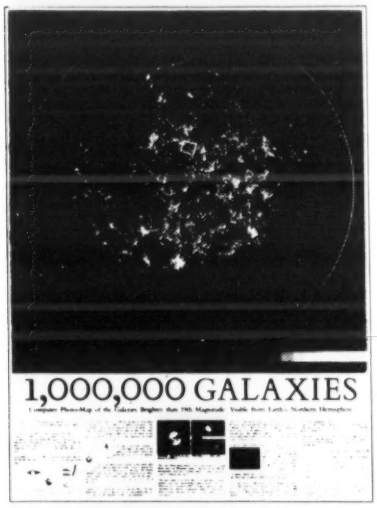
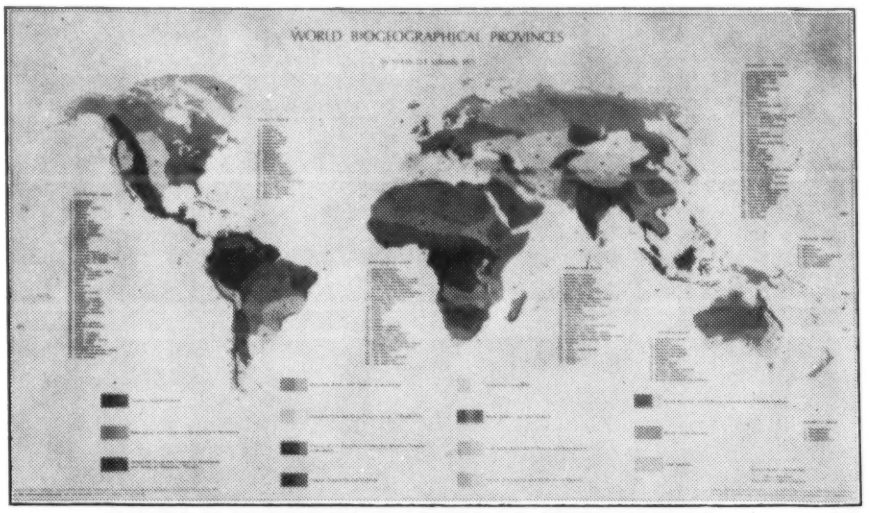


1,000,000 GALAXIES poster $4

"This is the large-scale texture of the universe." A new computer-generated photomap of the one million brightest galaxies visible from Earth. Text by P. James E. Peebles and Stewart Brand. 36"x48", mailed in a tube.

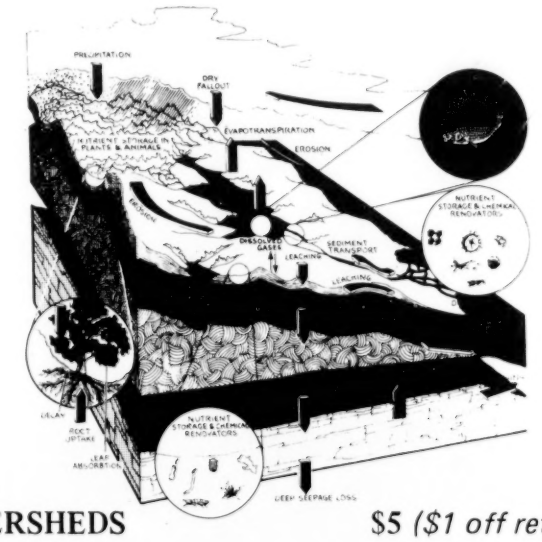


WORLD BIOGEOGRAPHICAL PROVINCES map $3

The first printing of 3,000 sold out. This second printing includes Antarctica, corrects a few errors that were in the first one, and has even sharper colors. You get a reprint of Raymond Dasmann's "Biogeographical Provinces" article with the map. 22-1/2" x 39", mailed in a tube.

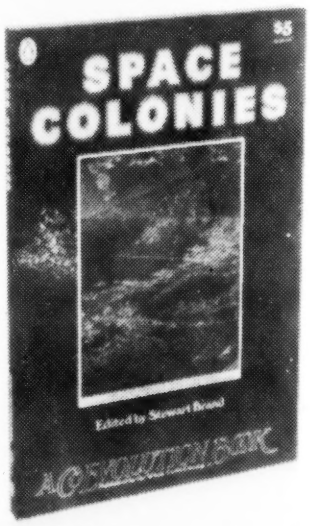
SOFT TECH $4 *($1 off retail)*

Brand new. In one place, all of the best reviews and best articles we've run on soft technology. John Todd, Steve Baer, Malcolm Wells, Day Chahroudi, Witold Rybczynski, edited by J. Baldwin. Put **Soft Tech** *next to* **Rainbook** *and* **The Energy Primer** *and you've got everything. 176 pages, indexed.*



WATERSHEDS $5 *($1 off retail)*

Edited by Dr. Watershed (Peter Warshall), this is our most ambitious book since the **Whole Earth Epilog**. *It is based on Peter's Watershed Issue of the* **CQ** *but is mostly new material and even more densely illustrated. What the Biogeographical Provinces map does for rethinking world politics, this book does for local politics. 176 pages, indexed. (For delivery August, 1978.)*



SPACE COLONIES $4 *($1 off retail)*

Soon to be in its third printing in a year (45,000 copies). It has the strongest arguments in print for Space Colonies (Gerard O'Neill, Jerry Brown, Russell Schweickart, Eric Drexler, Lynn Margulis, Buckminster Fuller, Michael Phillips, Paolo Soleri) and the only arguments in print against (fierce ones — Lewis Mumford, E.F. Schumacher, David Brower, John Holt, Ken Kesey, Wendell Berry, George Wald, William Irwin Thompson, Wilson Clark, Dennis Meadows, Garrett Hardin, and Gary Snyder). On the fence: Paul and Anne Ehrlich, Michael McClure, Richard Brautigan, Carl Sagan. 160 pages, indexed.

TWO CYBERNETIC FRONTIERS $2

During the 2-year hiatus between the **Whole Earth Catalog** *and* **Whole Earth Epilog** *I did nothing but two pieces of reporting. Those two stories informed everything that's happened since. They are: "Both Sides of the Necessary Paradox (Conversations with Gregory Bateson)" and "Fanatic Life and Symbolic Death Among the Computer Bums." 96 pages.*

—SB

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